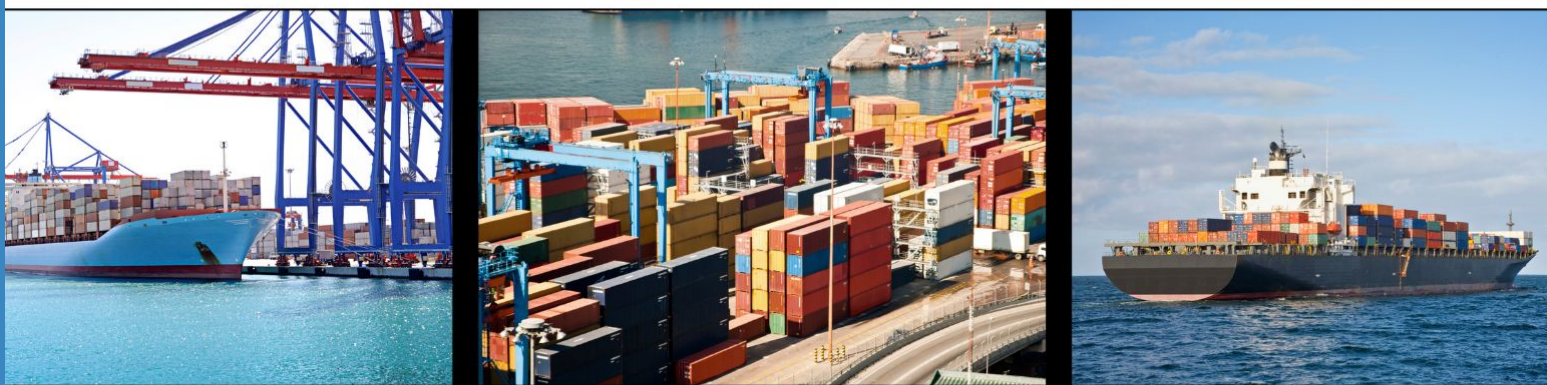


Recommendations on the Maritime Transportation Data System Requirements

Commissioner Carl W. Bentzel



Federal Maritime Commission

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Executive Summary

This report is being issued from Commissioner Carl W. Bentzel. In November 2021, Federal Maritime Commission Chairman Daniel B. Maffei requested Commissioner Carl W. Bentzel to examine the issue of data and maritime commerce. The focus of the project was two-fold: 1) to catalog the status quo in maritime data elements, metrics, transmission, and access, and 2) to identify key gaps in data definitions/classification and utilization. The goal was to develop recommendations for common data standards and lexicon and access policies/protocols.

This became known as the Maritime Transportation Data Initiative (MTDI).

The process included 18 weekly meetings with every aspect of the maritime/intermodal supply chain, ultimately involving 80 different participants. These events were livestreamed via the internet and were supplemented by an open comment process, and additional meetings with a wide range of international and federal stakeholders and other pertinent parties. The MTDI culminated with a Data Summit held on June 1, 2022, that included the full participation by MTDI representatives. A summation document was prepared by FMC staff following the Summit.

In November 2022, a draft document conveying the preliminary recommendations from the MTDI was shared with all MTDI participants as well as other interested parties to review and provide comments helpful to formulating a set of final recommendations on implementation of a track and trace methodology for the U.S. maritime supply chain. These track and trace events are separated and identified in specific proposed recommendations that can be found in the Appendix (1.0-1.4).

- 1.0 General Reporting Requirements
- 1.1 Ocean Carriers Requirements
- 1.2 Marine Terminal Operations Requirements
- 1.3 Port Operations Requirements and Recommendations
- 1.4 Intermodal Rail Requirements

The final recommendations generated through the MTDI process call for the establishment of the Maritime Data Transportation Data System (MDTS). In broad terms the MDTS would: establish a system of information on planned ocean carrier voyages, information on vessels transits with real-time position of vessels and real-time estimates of arrival, harmonization of standards for public information related to terminal access for cargo retrieval and standardize the method of charactering cargo status for cargo retrieval from MTOs. The recommendation also proposes to extend similar in-transit visibility and terminal status information requirement to intermodal rail carriers servicing ocean carrier shipments.

This final recommendation also addresses transparency, ease of access, and coordination of information concerns. The wide variety of carriers, terminals, and affiliated services providers (e.g., drayage trucking intermodal equipment providers, warehousing, distribution centers, off-site depots) and unique market and geographical considerations ensures that almost every port complex is unique in operations and the process of coordinating the thousands of companies

doing business at a port. As such, the MTDS recommendation would recognize the role of the port authority in providing public access to ensure that they provide information from ocean carriers servicing the port, MTO's operating at the port, and intermodal rail carriers servicing ocean carrier intermodal shipments through the port, as well as other general port-wide information such as that related to scheduling berthing/pilotage, and other port-wide operating conditions. Additionally, the recommendation for the MTDS proposes that the FMC issue voluntary guidelines on potential activities surrounding intermodal services activities impacting intermodal ports.

Statement By Commissioner Carl W. Bentzel

Transitioning From the Maritime Transportation Data Initiative (MTDI) to the Maritime Transportation Data System (MTDS)

The Maritime Transportation Data Initiative was borne from the fundamental need for data transparency and harmonization of cargo movements amongst supply chain stakeholders.

The initiative and subsequent proposed recommendations are based on track and trace methodology that will enable a harmonized in transit visibility standard. This will create an environment of greater accountability for stakeholders moving and receiving cargo. Put plainly, a mandated standard will enable all stakeholders to be on the same page. The biggest take away from the 18 public meetings held as part of the MTDI and the information gained from the 80 supply chain experts who participated, was that for the supply chain to operate efficiently, there needs to be uniformity on how data is shared and communicated as well as to address rising container volumes and inevitable future supply chain disruptions and cargo surges. This report proposes creating the Maritime Transportation Data System (MTDS) to achieve these priorities.

The intent of the recommendations contained in this report is not to require the change of individual business practices or to require new information services or systems. The recommendations are aimed at harnessing existing information systems to maximize the value that can be provided by achieving real-time information and harmonizing content. In large part, stakeholders are already in agreement on these recommendations, what needs to happen is to put the recommendations into practice.

Specifically, the recommendations focus on critical operational events in the intermodal transportation delivery system and establish real-time position and estimated arrival times for container shipments, harmonization of status of cargo while in storage at terminals, and proposals to establish information sharing practices more effectively for the industry. The recommendations would continue to require cargo information to be kept confidential and are not intended to disrupt the flow of information under collective bargaining agreements. As such, the requirements adhere to existing practices governing the movement of cargo through our ports. Ultimately, an updated and more transparent data sharing practice for international shipping will benefit intermodal transportation service providers, U.S. importers, exporters, and the U.S. public by achieving greater efficiency.

Why is this important? As I have said throughout this process, the movement of a container carrying millions of dollars of cargo has a delivery span from overseas origin to domestic destination that is on average of one-to-two-months' time. Throughout this movement there are several "black hole" moments. This loss of cargo visibility can set off a chain reaction of chaos within the supply chain.

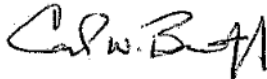
I like to contrast this with what happens when I order a \$10 dollar pizza delivered. In that transaction, my local restaurant provides me an order confirmation, lets me know when my pizza is being cooked, tells me when the pizza goes out for delivery, its status while it is in transit

(often via GPS), when the driver is approaching my house, and sometimes I even receive a picture confirming delivery. The discrepancies between the two visions are remarkable. The best that could be said of the existing systems of information supporting the ocean-linked supply chain is that they are ad hoc. The MTDS will set a standard for information disclosure and keep the delivery mechanism harmonized.

I would like to take this opportunity to thank my Counsel, John Young, for the extraordinary time and effort he expended coordinating MTDI meetings, working on this report, and all its affiliated documents. He is truly dedicated to the cause of better data. I would also like to thank all the FMC staff that participated in the MTDI process and finalization of the report. Particular credit is due to Dr. Kristen Monaco, Director of the Bureau of Trade Analysis (BTA), and all the BTA staff that helped along the way. Also, I must thank Sarah Cinq Mars for her eye for detail. Finally, Carl Savoy, who managed the substantial process of linking 80 MTDI participants in virtual meetings.

Most importantly, I would also like to recognize the participants of the MTDI. I was incredibly impressed with their ability and willingness to provide unfiltered expertise, and advice. I believe that all segments of the ocean shipping industry exhibited true professionalism in helping to provide an honest appraisal of the current situation with respect to the MTDI. Finally, I would like to thank Chairman Daniel B. Maffei for his vision and willingness to establish the MTDI, and his support of, and interest in, the MTDI project.

Thank you,

A handwritten signature in black ink, appearing to read "Carl W. Bentzel". The signature is written in a cursive, slightly stylized font.

Carl W. Bentzel

Maritime Transportation Data Initiative (MTDI) Final Report

The pandemic created an upheaval within the global supply chain that is still being resolved. Volume surges, equipment dislocation and shortages, warehousing and affiliated labor shortages, and intermodal rail service disruption all contributed to the supply chain meltdown. The pandemic revealed some deeply concerning practices about how participants within the supply chain communicate, interact, and share information. At its best, the supply chain provides seamless and timely transitions. At its worst, it is made up of a series of independent operators that are not well coordinated or invested in the supply chain. The complexity of the system that moves intermodal cargo in the United States is stunning, and our Nation's supply chain requires an intricate ballet of services to work in constant coordination. Breakdown by even one component of the intermodal system will affect the entire system.

The upheaval of the supply chain also revealed the consequences of decades of ocean carrier disinvestment from landside operations, starting with terminal ownership and continuing to the sale of chassis and container leasing to third party providers. While there may have been an economic rationale for these business decisions, the result was an increasingly fragmented supply chain that struggled to connect transportation partners with timely operational information.

Shipper actions throughout the pandemic contributed to the causes of congestion during the height of the pandemic, as the operating model of the supply chain drastically shifted from “just in time” delivery to “just in case” delivery. Panic buying consumed finite space available at terminals, distribution centers and warehouses to accept and/or store cargo, and caused railroads to ground cargo in railyards, ultimately reducing the ability to move cargo from marine terminals and causing cargo backups in ports and terminals. Containerized volume surges revealed the impacts of years of under investing in supply chain labor and problems were further exasperated by port infrastructure constraints.

As the United States addressed COVID-19 recovery, it generated massive opportunity for pent-up demand for e-commerce retail consumption. This level of sustained import cargo demand recently subsided by significant levels and trade carried by ocean carriers has returned to a levels of normalcy.¹

The drastic swing in trade volume early in the pandemic occurred at precisely the wrong time, as intermodal equipment was not properly in place, additionally, the number of available longshore workers was reduced because of COVID-19 health impacts to the workforce. By the early summer of 2020, reports were suggesting that cargo throughput at the Ports of Los Angeles and Long Beach was slowing down substantially because insufficient numbers of intermodal chassis supplies that were available to meet demand. According to association representatives of the intermodal equipment provider industry, supply of both containers and chassis was low at this juncture because certain equipment had shifted to areas of the country where it could be used more productively, and other equipment was undergoing deferred maintenance during the period

¹ Citing, *Assessment of P.R.C. Control of Container and Intermodal Chassis Manufacturing – Final Report*, available at www.fmc.gov weblink to Commissioner Carl W. Bentzel <https://www.fmc.gov/wp-content/uploads/2022/03/ContainerandChassisManufacturingFinalReport.pdf> (last visited Mar. 14, 2023).

early in the pandemic when cargo volumes were drastically reduced. This was the first major operational area of disruption in the supply chain.²

Initial congestion at the ports was soon felt on the ocean side as carriers were forced to wait for berth. Traditionally, ocean carriers can anchor at a marine terminal berth without delay, but by the summer of 2020, vessels were forced to rest at anchorage outside ports, sometimes for as long as two weeks, until a berth became available. The number of vessels waiting for berth space at the Ports of Los Angeles and Long Beach ballooned to well over 100 ships in the fall of 2021, and 150 nationwide. This reflects a change from pre-pandemic when only a few vessels daily had to wait to berth, primarily because of weather events.

Supply disruption spread as shippers struggled to secure containers that were becoming scarce. Early in the pandemic, one ocean carrier representative explained that benchmark service from Beijing to Chicago that pre-pandemic averaged 32 days in transit was now averaging 72 days in transit. Reports from ocean carrier executives later in the pandemic indicated that transits were approaching three times the pre-pandemic transit time. The delays in transit meant that container utilization went from 10-12 round trips across the Pacific to 3-5 round trips, which in turn, reduced the availability of containers pushing the supply chain even further off balance. With products piled up in Chinese factories, and shippers bidding prices higher for containers and shipping services, Reuters reported that “average container turnaround times have ballooned to 100 days from 60 days previously.”³

Massive workforce disruptions due to COVID-19 in North America affected not only ports, but distribution centers, railroad intermodal facilities, and warehouses, as well as inland rail and truck transport lines. Without adequate staffing, containers started to pile up at all these locations.

In addition, there were rapid shifts in trade lane demands based on shifting commodity and cargo blends forced by changes in consumption patterns and the need for shippers to adjust trade flows because of the unavailability of shipping resources. These factors posed extraordinary challenges to ocean carriers.

Even with these considerable challenges, the industry carried record volumes of containerized cargo. The Federal Maritime Commission’s (FMC) Annual Report for Fiscal Year 2021 estimated that containerized imports increased by 27 percent, and exports increased by 1 percent during the pandemic period. One could effectively argue that when segments of the economy were down by a reduction of service as much as 80-90 percent such as aviation and travel and leisure, that the maritime industry sustained the U.S. economy.

Congestion issues created great economic cost that continues to this day. At the height of the pandemic, spot market rates showed that some shippers were paying anywhere from 300-500

² Frankie Youd, *Global shipping container shortage: the story so far*, Ship Technology.com, (April 29, 2021), available at <https://www.ship-technology.com/features/global-shipping-container-shortage-the-story-so-far/>.

³ Stella Qiu, Shivani Singh, Roslan Khasawneh, *Boxed out: China’s exports pinched by global run on shipping containers*, Reuters.com (Dec. 10, 2020) available at <https://www.reuters.com/article/us-global-shipping-container/boxed-out-chinas-exports-pinched-by-global-run-on-shipping-containers-idUSKBN28K0UA>.

percent more to ship a container. Low value commodities that have limited pricing ability, and certain commodities that require excessive space, were especially hard hit by ocean shipping prices. For most retail product suppliers, or manufactured component parts suppliers, the cost of ocean shipping is relatively incidental to total unit production cost. Higher shipping costs might have been undesirable, but they were manageable. Disruptions to supply chain reliability and extended delays in shipping were much more problematic and had a much greater macro-economic impact to these companies. A well-functioning supply chain requires certainty.

Pandemic related supply chain costs to the U.S. economy resulting from congestion were substantial. Industries such as automotive parts suppliers, home builders, chemical products suppliers, healthcare products suppliers, and even food and grocery products, all faced substantial challenges and delays in shipping that resulted in slowdown of production, or loss of market opportunity. Over the past two years, shipper groups estimated losses anywhere from 10-20% of business opportunity because of supply chain congestion. The U.S. Securities and Exchange Commission 10-K and 10-Q annual and quarterly filings from this period reveal a startling breadth of national economic loss because of the supply chain.

The FMC evaluations of ocean carriers' demurrage and detention practices reported that fees levied during 2021 were over \$5.3 billion billed by the top carriers, for example, per a vessel-operating common carrier (VOCC) FMC audit. This amount is only a fraction of the real economic costs, which encompassed increased freight charges, congestion, and delays. However, the greatest levels of economic loss were downstream production costs resulting from delays in shipping.

While many elements contributed to supply chain issues, it was apparent that insufficient data transparency and industry coordination were major factors exacerbating the business challenges of intermodal shipping. Data transparency issues hindered the supply chain well before the pandemic squeezed maritime cargo efficiencies. The transmission between ocean carrier and terminal to truck and railroad to truck have proven to be problematic even in the best of times.

As one MTDI participant with over 35 years of industry experience stated in an MTDI meeting,

“Every single element of the issues we are discussing today have existed for a decade or more. These were known issues, known problems. We were able to throw resources or throw band aids at the situation that kind of got us through. We are now at the point where it's all band aids...gum...string...trying to keep this thing together---and it's just falling apart.”

The statement summarizes the pertinence of, and need for, the MTDI recommendations presented in this report. The current system is not working adequately, and the costs of not addressing it are more than the Nation should bear again. The challenges created because of the pandemic, provides cause to evaluate, reboot and recalibrate our system of providing information on intermodal shipping.

Throughout the pandemic, inside and outside the terminal gates, miscommunication and congestion ensued. Decades of sustained growth of container shipping volumes fed the development of intermodal shipping markets which has also created sizable data and operational gaps. MTDI participants uniformly reported that information is sometimes supplied by the wrong

party, and other times it is not provided at all. Decisions on operational status affecting cargo movement, or estimated arrival are not widely disseminated or harmonized with supply chain partners. These gaps in data led to massive challenges to service providers which contributed to the breakdown of other segments of the intermodal supply chain. When standards are not in place, and information is not harmonized, it is the equivalent of kicking the can down the road for the next user to figure out.

The intermodal supply chain crisis came to a head during the summer of 2021 when one of the Nation's two Class 1 railroads servicing the West Coast abruptly suspended service from the Ports of Los Angeles and Long Beach for seven days. Just two weeks later, the Long Beach Port Director unsurprisingly announced that the pandemic-era container surge at the port resulted in a record number of containers handled for the month of July (2021), up 4.2% from already hyper-enhanced shipping levels of July 2020.

Public concern about the state of the supply chain was heard and amplified in Congress. Legislation was introduced in both the U.S. House of Representatives and the U.S. Senate to provide the FMC additional resources and enhanced authority to challenge alleged abusive shipping practices that were addressed with the passage of the Ocean Shipping Reform Act of 2022 (OSRA 22).

In signing OSRA 22 into law President Biden and the bipartisan support of Congress affirmed the importance of the maritime and intermodal transportation system and made even more clear on the necessity of maximizing cargo data to enable greater freight fluidity and efficiency.

Coinciding with the Congressional consideration of OSRA 22 were regulatory activities taken by the FMC under the auspices of existing authority. Prior to OSRA 22, Fact Finding 29, under the leadership of Commissioner Rebecca F. Dye, was established to engage supply chain stakeholders in public and non-public discussions to identify commercial solutions to certain unresolved supply chain issues that interfered with the efficient operation of the U.S. international ocean supply chain. In July 2021, Chairman Daniel B. Maffei, ordered the establishment of the Vessel-Operating Common Carrier Audit Program. The initial scope of the audit program was intended to analyze the top nine carriers by market share for compliance with the Commission rule interpreting 46 U.S.C. § 41102(c)⁴ as it applies to detention and demurrage practices in the United States. The ongoing program has been expanded to address exports and compliance with antiretaliatory training, audit practices related to billing, appeals procedures, penalties, and other practices.

FMC Jurisdictional Authority

The FMC has regulatory jurisdiction over the practices of the common carriage (ocean liner services) of goods by water in the foreign commerce of the United States. Since the passage of the Shipping Act of 1984, the law defines common carriage to include intermodal, or interior point intermodal (IPI) service where the common carrier, “assumes responsibility for the transportation from the port or point of receipt to the port or point of destination.” 46 U.S.C. § 41102(7).

⁴ 46 CFR § 545.5.

FMC Requirements on the Handling of Cargo (46 U.S.C. § 41102(c))

“A common carrier, marine terminal operator, or ocean transportation intermediary *may not fail to establish*, observe, and enforce *just and reasonable* regulations and *practices relating to or connected with receiving, handling, storing, or delivering property.*”

Methodology of the MTDI Process

The goals of the MTDI were:

- Catalog the status quo in maritime data elements, metrics, transmission and access;
- Identify key gaps in data definitions/classification; and
- Develop recommendations for common data standards and access policies/protocols/practices.

Meetings were held with focused groups of supply chain stakeholders to understand from each of their unique perspectives how an ocean container moves from one stage of its journey to the next.

The first MTDI meeting was held in December 2021 with representatives of the drayage industry. Subsequent meetings were held with representatives of other service providers involved in the supply chain, including with all ocean liner carriers calling the U.S. and the major MTO's servicing those carriers. Each meeting lasted one hour, included three to six participants, and was open to the public to watch via web streaming. A list of all participants in the MTDI, and the dates of meetings can be found at Appendix 1.6 – MTDI Meetings and Participants. Every meeting was recorded and saved on the FMC's YouTube channel that can be found on the FMC website. For consistency, identical questions were provided to all participants one month prior to their meeting time. Participants were requested to answer a series of data-centric questions during the meetings.

Questions Asked of All Participants:

- **What are the key data elements that are integral to your operations?**
- **To the extent that you export, what are the key data elements that are integral to export?**
- **What data do you not currently have access to that would improve your efficiency/performance?**
- **How do you get the data you need from other parts of the supply chain? (ex. Electronic Data Interchange, Application Programming Interface, email, some other method) Does this create inefficiencies?**
- **How do you provide data to your customers?**

The MTDI meetings concluded with a Data Summit, held virtually, that considered outlying issues and garnered further comments from MTDI stakeholders. Staff from the FMC's Bureau of Trade Analysis (BTA), moderated breakout groups and used this information, along with

comments provided to the MTDI, to summarize issues and consolidate the comments that were provided through the MTDI.

Clear themes emerged from the responses to the standard questionnaire, weekly meetings with supply chain service providers, and the FMC Data Summit about challenges around identifying data and how it is shared. The MTDI process also provided recommendations on how these challenges should be addressed.

This record of comments became the basis for draft preliminary recommendations for establishing a set of standards for maritime transportation data, and a common lexicon for describing the system, to be proposed as the Maritime Transportation Data System (MTDS). The preliminary recommendations that were circulated for further comment are now incorporated into the set of documents being issued for public review: this final report includes a final recommendation of standards for what could become the MTDS; proposed harmonized MTDS lexicon of terminology, and a flow chart with a proposed description of process.

The following discussion in this report outlines pertinent issues and discusses recommendations formulated after consideration of the information received through the MTDI process.

Best Information

MTDI commentators, especially beneficial cargo owners (BCOs) and other consumers of intermodal carriage, almost uniformly complained about the challenge of getting the most accurate information to use for pick-up, delivery, and receipt of cargo. For instance, many BCOs/consignees complained about misinformation on status of cargo availability for pick-up requests made of ocean carriers, ultimately causing trucking assets to be turned away from a terminal because of inaccurate reporting of container availability status.

The general challenge in this area of data communication is ensuring that of the multiple parties that handle intermodal containers, the party best able to provide information will in fact provide that information. Also, critical to avoiding transportation inefficiencies is the need to ensure that the best source of information provides the best information to all relevant parties to facilitate delivery of the shipment on a timely basis, reflecting real time status.

To achieve this, the MTDI recommendation for the establishment of the MTDS proposes to require information to be sourced from the party in possession of cargo at the time of the information request. If a third party wants to provide information on container movement or status, the third party would either provide access to information with the party in possession of the container or provide information consistent with party in possession of the container. Only by guaranteeing the integrity of information on the movement and status of intermodal container movements will harmful, and largely unnecessary inefficiencies in cost, and the attendant environmental consequences of transportation movement without purpose, be ameliorated.

The MTDI recommendations for the MTDS do not endorse the creation of a new system of information or standards on data transmission, but rather recommends the type of reporting required as a performance standard, rather than a prescriptive operational standard, for the

dissemination of information consistent with proposed reporting requirements. However, the MTDI recommendation for the MTDS does recommend a minimum proposed requirement that all information be provided through an Application Programming Interface (API), a time and date stamp for each operational event status change, public access of this information for at least three months, and storing the information for either two to one years depending on if it is carrier or protected cargo specific generated information.

The MTDI recommendations for the MTDS are largely focused on creating in-transit visibility, and projected arrivals of the movement intermodal ocean carriers and to fully implement track and trace methodology to provide information on terminal access and the status of containerized cargo while in terminal. To completely provide track and trace coverage, under through bill of lading, in-transit visibility of intermodal rail carriers, information on intermodal rail terminal access, and the status of containerized cargo while in rail terminal must also be achieved. While the current recommendations do not endorse container tracking, which is still under development, the recommendations could set the framework for the private sector to undertake such an endeavor in the future.

Importantly, the MTDI recommendations will not interfere with industry competition, or the necessity of maintaining confidentiality of contractual information. The MTDI recommends classifying all MTDS information as either Open Facing information or Closed Facing information. Open Facing information is data made available to the shipping public. This information should remain available publicly and accessible through the API source and available for three months and should keep it stored and accessible upon request for a two-year period. Closed Facing information is data that is business confidential and available only to the transportation customer. Closed Facing information would be secured, and accessible only to those parties legally entitled to access the data, remaining publicly available for three months and stored for a one-year period.

This report emphasizes the importance of access to information but by distinguishing between Open Facing information and Closed Facing information, it also recognizes the importance of contractual relationships in the supply chain. Among the contractual relationships that cannot be ignored are the collective bargaining relationships that exist in the various ports and define the work jurisdictions of the employees covered by those collective bargaining agreements. None of the requirements or recommendations in this report are intended to disrupt the flow of information under these collective bargaining agreements.

This would mean that ocean carrier vessel operations and arrivals, and intermodal rail arrivals and departures, as well as information related to access and restrictions into/out of both marine and intermodal rail facilities would be publicly accessible through an API to members of the shipping public if this recommendation were implemented. Information related to status of a container while in transit on an intermodal rail train, or cargo status while in the custody of a terminal would be harmonized as to form and content and would be available in the MTDS format to those shippers, or their agents, in privity of contract with ocean and intermodal rail carriers.

Real Time Information/Track and Trace Methodology

The single most important suggestion participants made during the MTDI comment process was for the need to have real-time, credible information on the transport of containerized cargo. Uniformly, cargo shippers proposed the need for data to be provided to allow the tracking of movement of cargo by GPS, or other position information systems of the ocean carrier or intermodal rail carrier, from the commencement of its journey as it is loaded on-board a vessel until, under a through bill of lading, until it exits an intermodal rail terminal.

Implementation of a track and trace standard would enable real time exchange of data throughout the supply chain to allow participants access to harmonized terminology, processes, and significant transportation events, typically communicated through an API.

All major international carrier lines servicing the United States provide functionally similar services, the culture, business model, and how each communicate information is anything but uniform. Putting these varying elements into a port or terminal with shrinking capacity creates a recipe for congestion. Instituting agreed upon carrier standards for real-time in-transit data through publicly available data sets for both imports and exports would alleviate a substantial amount of the initial landside miscommunication and problematic landside operations and would facilitate greater long-range planning and coordination throughout the supply chain. This is the top MTDI objective.

The Digital Container Shipping Association (DCSA), an MTDI participant, has facilitated work on behalf of the ocean liner shipping industry in developing a digital data-based system to implement a track and trace methodology. Its three-year plus effort on behalf of its membership includes collecting and documenting carrier centric definitions. DCSA's membership is comprised of the major international carriers, all of which are currently servicing the United States. DCSA has also developed and negotiated an industry lexicon that has been agreed upon by the DCSA members, and which address a significant portion of the supply chain. Rather than replicating their work, the recommendation made for the MTDS would build off the efforts of DCSA to create a track and trace real-time system of digital data information for intermodal shipping and to harmonize the lexicon describing the requirements under this system.

Common Lexicon

MTDI participants identified the first data choke point on the landside as communication between the carriers and the terminals, moving on through the drayage drivers, railroads, on through to the warehouse/distribution/3PL sites and to destination.

A theme and observation all MTDI experts expressed was that most supply chain participants were often using the same terms but calling data movements or items something different. There is general agreement on what data that needs to be exchanged, but frustration that communications are often hindered by “data language barriers.”

Equally important to the lexicon was the transparency and source of the data and the timeliness in which it was transmitted and/or received. Miscommunication contributed to operational delays

throughout COVID-19, but it was an issue that all participants readily admitted was a common occurrence even before pandemic cargo surges and one that all MTDI participants expressed a willingness to rectify.

Even with full agreement, the carriers have been slow to fully adopt and implement the DCSA agreed upon lexicon, which would help harmonize the initial flow of cargo information from carrier to terminal, ship to shore, and from port to rail and highway carriers. The harmonization of exchanging operational cargo data begins with implementation of a track and trace methodology and adoption of a common lexicon.

The recommendation for the MTDS is to endorse the DCSA's proposed lexicon, with important changes to reflect recommended requirements to impose real-time and real-time estimated reporting requirements, enhancements to requirements for MTO reporting, and additional coverage for intermodal rail. Importantly, the recommended MTDS lexicon descriptions would establish regulatory requirements establishing a real-time system of information governing the movement and status of containerized cargo through the entirety of the system. The following MTDS harmonization of definitions that are of special importance are:

- **Detention**: A penalty charge that is assessed, by a carrier, for use of a container, beyond an allocated period of free time, to incentivize the return of the container. To the extent that a third party collects detention on behalf of a carrier, it would be consistent with the amount charged by the carrier for use of its container more than allocated free time.
- **Demurrage**: A penalty charge that is assessed, by a terminal operator terminal, for use of storage at the terminal, beyond an allocated period of free time for pick-up, to incentivize the pick-up of the container from the terminal. To the extent that a third party collects demurrage on behalf of a terminal, it would be consistent with the amount demurrage charged by the terminal operator.
- **Earliest Receiving Date**: The earliest receiving date (ERD) is an actual and estimated event where a carrier provides information to a terminal for publication that the carrier is estimating real time arrival at a terminal berth within five days. The terminal would make this information available to provide terminal access to exporters. Any change to availability caused because of issues related to terminal operating requirements would be made publicly available by 12:00 PM (Local Time) the preceding day of business.

MTDS Shipper Recommendations

Much of the MTDI meeting discussions centered on the carrier, MTO, and railroad intermodal carrier responsibilities and performance. However, if greater efficiency is going to be achieved across the supply chain, all participants must engage equally, and be held to similar performance standards. This includes the shipper/consignee. The shipper/consignee also has responsibilities in the administrative release of cargo and within the commercial relationship between carrier and MTO. Shipper/consignee participation is necessary in the pre-check-in process to ensure fluidity and efficiency within the supply chain. The following shipper responsibilities should be established as part of the port coordination voluntary guidelines:

- Awareness and tracking of vessel arrival
- Customs clearance payment (documentation) before arrival
- Release bill of lading
- Delivery order, if moving under merchant haulage, within free time.

MTDS Ocean Carrier Recommendations

The landside portion of the supply chain begins when carriers pull up to berth. Vessel on time performance has been drastically dropping over the last several decades. Performance suffered even more so during COVID-19. At the height of the pandemic, not a single carrier exceeded a 30% on-time arrival rating. Even considering the wide range of challenges resulting from global supply chain issues that could adversely impact arrival of vessels, this standard is unacceptable. Ultimately, having agreed upon real-time and real-time estimated API data sets will greatly accommodate the physical scheduling of terminal operations, rail carrier coordination, and address other issues and services that impact landside movements.

It is easy to confuse vessel on time performance with voyage visibility. Specifically, the Automatic Identification System (AIS) and satellite tracking information, as mandated through the Global Maritime Distress and Safety System (GMDSS), have been clumped together to be synonymous with the tracking vessels and cargo. Current information provided through these systems usually only provides actual position information, not projections for arrival at berth. Estimated arrival times are usually requested to be transmitted by e-mail to a port or terminal, and some carriers only provide paper schedules of operational services with transit times. This haphazard way of doing things must change.

Since 2004, the International Maritime Organization (IMO) has required that all international commercial vessels over 299 gross tonnages carry a Class A AIS transponder. GMDSS has been utilized since the late 1990s to require satellite communications services to transmit emergency distress locations amongst other information. Satellite information and AIS can be utilized to enrich other data sources and facilitate an accurate picture that will do more than provide access to a very slowly moving dot at sea with vessels' identification attached. For example, tools for tracking vessels currently exist. There are numerous services that track commercial vessels that are visible online and easily accessible to the U.S. Coast Guard and the various maritime exchanges that coordinate the movement of vessels within U.S. harbors. But the information that is now provided through these sources is inadequate, it does not formulate the basis for the realistic projection of services and does not begin to provide the ship to land data transmission necessary for the commencement of cargo operations that initiate landside supply chain movements.

The MTDS recommendations are formulated to support the adoption of real-time track and trace methodology to ensure that ocean carriers provide planning information, real-time actual position information (along with status information), and real-time estimates or arrival for each segment of a journey into or out of the United States. Planned carrier transit activities would be made publicly available, time and date stamped through API, three months from the commencement of a voyage. Any change to blank, cancel, or delay a voyage would be reported in real time. A

planned transit that was only delayed would keep its number designation and provide a real-time estimate of the new date of transit, time and date stamped through API.

After transit commenced, if the recommendation for the MTDS were to be adopted, the ocean carrier would be required to report on the vessel's real-time position along with harmonized information related to its status while in transit. Examples of such information are where it departed from, whether it was at an interim berth, reasons for delay, slow/regular speed, or anchorage. Most importantly, it would also report a real-time running forecast of arrival at each U.S. or foreign berth destination.

Importantly, the MTDS recommends standardization of information for U.S. exporters. Specifically, to better serve the needs of U.S. exporters, ocean carriers would provide real-time estimated arrivals at berth, time date stamped, five days in advance of arrival to the U.S. terminals they are servicing to provide as a standardized ERD. In turn, receiving terminals would make public information available through an API about the ERD, and in the event of terminal operations issues that necessitated a change to this policy, post notice of any change of ERD status at least by 12:00 PM (Local Time) the preceding day.

The data sets covered under the reporting for the MTDS comport with data recommendations made by the FMC's National Shipping Advisory Committee (NSAC), included as Appendix 1.5 – NSAC Data Recommendations, and would implement the first ever real-time in-transit estimated arrival reporting requirements for international liner shipping. The ocean carriers' operational responsibilities, after arrival at berth, would largely transfer to subsequent intermodal container handlers/MTOs and intermodal rail carriers subject to proposed MTDS requirements. However, in the case of shipments under an intermodal through bill of lading, ocean carriers would also be required, as mandated by the best information requirements, to source further information on intermodal handling or intermodal rail services from the entity in possession of cargo, or consistent with information provided by that entity.

MTDS MTO Recommendations

Marine terminals are provided information by ocean carriers related to potential arrival at berth and a bayplan to help facilitate the planning and order of loading and unloading services. MTOs function to facilitate the initial or end intermodal landside movements of cargo on behalf of their customers or clients, the ocean common carrier. Each cargo movement usually culminates, excepting on-dock rail shipments, with a trucking movement either contracted by the ocean carrier as ocean haulage, or the shipper as merchant haulage. The MTO, in most cases does not have a contractual relationship with shippers utilizing their facility. This adds complexity to the transaction of moving cargo that can be especially problematic if data and information flow is not well coordinated. Some port authorities have multiple terminals, and other port authorities operate as a terminal, so responsibilities for MTOs and ports are interchangeable to extent that those ports that operate as an MTO.

The MTDS recommendations are intended to harmonize the process of securing information addressing terminal access for delivery and pick-up, ship arrivals and departures, and harmonizing the descriptions on the status of cargo relative to the ability to deliver or retrieve

cargo from the terminal. According to industry sources, most existing operating systems in place can meet MTDS information recommendations, and no new information is being asked to be provided. MTO MTDS information would be classified as both Open Facing and Close Facing. This distinction would reflect the division largely between access to the facility, and information about cargo handling that could impact landside operational requirements.

Open Facing information would be required to be provided through an API, time and date stamped, and posted 12:00 PM (Local Time) the preceding day of business, to provide information as follows:

- ERD information 5 days in advance of an ocean carrier arrival operating with MTDS estimated arrival, based on real-time estimated forecasts for arrival;
- Information on loading and unloading operations at the berth with access to ocean vessel transit information, as provided by the ocean carrier;
- Terminal on-dock rail schedules with 12-hours' notice on departure and 8-hours' notice on arrival;
- Gate restrictions and closures to include weather or operational interruptions, empty container return acceptance, restrictions (e.g., double moves) or time window on free flow of freight movement, as well as change of location for storage or delivery information;
- Truck Appointment availability and process, including notification when all appointments are booked for a particular day, and process for requesting, modifying, or cancelling appointments; and/or
- Information on the availability of intermodal chassis.

Closed Facing information is information that would be restricted to contractual parties in privity of contract, identical to existing contractual, statutory and regulatory requirements which protect container status information to those parties with possessory interests, or their agents. This information would be made available to those parties qualifying as recipients of Closed Facing information for a three-month period and stored by the MTO for a one-year period. The MTDS recommends that this information be harmonized in content as follows:

- **Available:** The container has been released by the carrier and is capable of physically being moved from terminal, time and date stamped. This would require a determination by the carrier that legal obligations by the consignee or BCO had been met sufficiently as determined by the carrier. Separately, the MTO would have to make the determination that it could physically be able to transition the container for the next step of its journey, and to the extent that the terminal had any direct legal obligations with the shipper, that those legal obligations had been met.
- **Unavailable:** The default designation when the container cannot be moved for any reason and is not in any other status, time and date stamped.
- **On Hold:** The container cannot be moved pending government inspection. In addition to a time and date stamp indicating when a lawful inspection agency had tendered notice of inspection, the time of change of container status, and in the event of the container

inspection being off-terminal, a time and date stamp for gate-out/gate-in, and location of the inspection site.

- **Cargo handling:** The container cannot be moved pending cargo handling/stuffing and stripping/consolidation. In addition to a time and date stamp indicating the time of change of status, in the event of the container handling being off-terminal, a time and date stamp for gate-out/gate-in, and location of the cargo handling site.

In addition to harmonization of container status while in terminal, the MTDS recommends harmonization of status information on free time and demurrage penalties.

The MTDS recommendation defines “demurrage” as a penalty charge that is assessed, by a terminal operator, for use of storage at the terminal, beyond an allocated period of free time for pick-up. To be consistent with the FMC’s guidance on demurrage and the incentive principle, the MTDS recommends that third party charges for demurrage be consistent with those that were implemented by the MTO.

The MTDS recommendation would also require that any party entitled to receive Closed Facing information on cargo status be entitled to receive information on the amount of free time for each container, commencement of demurrage, and any enhanced demurrage. Notice of demurrage status should be time and date stamped, with indications when a container permanently exited the terminal. This information should be retained available consistent with Closed Facing publication requirements (made available for up to three months and stored for one-year).

MTDS Intermodal Rail Recommendations

Intermodal rail service is critical to extending our supply chain to interior points of the Nation. Each port relies on intermodal rail services to different extent and competes vigorously to attract intermodal rail service to expand the reach of the port to further inland points. The better the intermodal rail service, the easier it is for a port to service long distance freight gateways with discretionary cargo. Rail intermodal cargo volumes to and from ports can vary, but larger port complexes tend to service greater volumes of Inland Point Intermodal (IPI) cargo.

During the pandemic, intermodal rail service challenges contributed heavily to port congestion. Insufficient investment in personnel and equipment resulted in lost business opportunities, ultimately causing reductions in service and a temporary one-week suspension of service from West Coast ports to Chicago in July of 2021. Failing to extend MTDS recommended enhancements to railroad intermodal services would not effectively address the public need for coordinated real-time information through the entire supply chain. Accordingly, the MTDS recommends that intermodal rail carriers that carry over 250,000 intermodal car units, originating under contract from ocean carriers through a MTDS covered port to an inland rail ramp/terminal, be subject to the following:

Open Facing information to be provided through an API, time and date stamped, that would provide train departure information 12 hours in advance of the initiation of loading an intermodal train consist of a MTDS qualified port, and train arrival information 8 hours in advance of arrival at a MTDS qualified port.

Closed Face information on the location of intermodal railroad services to and to be provided through an API, time and date stamped to provide the location of railroad service in transit to a MTDS qualified port, or to a qualified MTDS inland rail ramp/terminal. This information should be kept business confidential available to the transportation customers and encrypted and protected by a pin or other security system and only accessible to those parties legally entitled to access the data and should remain publicly available for 3 months and stored for a 1-year period.

Intermodal rail ramps/terminals that are subject to the requirements of the MTDS would provide Open and Closed Facing information identical as those applicable to a marine terminal.

Ports Coordination Recommendations

The differences between U.S. ports are substantial, and most ports have developed in response to the unique service needs of surrounding communities, governance structure and geographical and market conditions impacting cargo movements. In the U.S., the major distinctions between ports are operating ports, landlord ports, and finally larger and smaller ports. Because of the differences between U.S. ports, and the need for consumers of port services to have access to local business information, the MTDS recommendation calls for the establishment of a leadership role for port authorities to require MTDS ports to coordinate information from ocean carrier, MTO, and intermodal rail carrier services providers, to disseminate information related to berthing and access, and other general port-wide information. This will encourage greater transparency of services and provide access to general information effecting transportation and cargo handling services, securing berth access at port terminals and other information affecting port-wide operations.

Separately, the MTDS recommendation calls for the FMC to issue voluntary guidelines on practices that could guide a better informed and coordinated system of services that impact the ability to move cargo through the intermodal system. The biosphere of actors that impact intermodal shipping is substantial, including, but not limited to intermodal chassis providers, drayage trucking companies and drivers, transloading facilities, offsite storage facilities, distribution centers, logistics companies and freight forwarders, and other intermodal service providers caring for and maintaining equipment and processing cargo.

The MTDS recommendation for voluntary guidelines will cover the following:

- Forecasted and projected carrier and cargo service levels
- Adequacy of drayage trucking and drivers and intermodal equipment
- Policies related to making essential information publicly available from third party service providers of intermodal services (i.e., warehouses, storage facilities, distribution centers)
- Recommendations and advice for changes to policies impacting cargo handling operations
- Policies related to implementation of environmental benefits
- Equipment returns policies

- Response to special conditions or force majeure events
- Other market factors that could impede normal cargo handling operations
- Shipper obligations/best practices.

The challenge of managing the terminal and port environment is already being endeavored at each U.S. port. Each port has different obstacles, so the MTDS recommendation would require MTDS ports to be a repository of information on ocean carrier, MTO, and rail carrier services and certain other port-wide information. But would adopt an approach that would rely on FMC guidance to allow each MTDS port to consider policies related to intermodal shipping and ancillary services to respond according to its own need, and not subject to any direct federal mandate.

Many BCO/shippers participating in the MTDI complained about the lack of centralized information, or the lack of one source of information, for ease of access terminals and ports. While ocean carriers, MTOs, and intermodal rail carriers are the generators of information on transit and cargo status, they tend to focus more minutely on information and issues related to each entity's service. Requiring each MTDS port to provide repository information on services to each port is consistent with existing practice and will reduce inefficiency.

Requiring each port to continue to provide operational information will allow the port to independently determine whether to supplement or format information provided to make it more accessible. For instance, an MTO might only choose to provide shorter term ocean carrier arrival information at its terminal, while this information might be necessary and helpful to facilitate cargo retrieval, it will not be especially helpful for long term planning of transportation. The MTDS recommendation will encourage each port to use operational data as they need, but also determine how to format the data, and source the data to serve general port needs that might not be shared from the individual actors sharing information. Under this division of authority, port authorities could either rely directly on access to information provided by intermodal carriers and MTOs or chose to format and provide additional information at their own discretion.

The MTDS recommendation for MTDS ports is to provide ocean carriers information necessary to secure pilotage and a berth at a terminal. Scheduling berthing time is essential in estimating arrival and coordinating an earliest return date, which initiates the scheduling of the landside operations, including truck and rail and securing terminal space. Each port handles piloting and berth availability differently, but better coordination and harmonization of practices are essential to allow ocean carriers to best forecast arrival time, and in providing reliability of service for shippers' and other supply chain stakeholders. Ports would also provide information to address each related issue impacting port-wide operations. This could be weather-related access adjustments, national security-imposed modifications impacting shipping, or other extraordinary operational measures, such as temporary off-site storage, or empty container return sites.

In many cases, ports being blamed as the cause for congestion is unwarranted because of the multitude of business operations occurring at and around ports that are out of the port's control. However, ports can, and should, provide a better window into the cargo movements and operational conditions of their facilities and connecting infrastructure.

Other Considerations

Green Shipping Initiatives

Maximizing the data shared about port-to-port carrier calls will improve both the supply chain and mitigate the environmental impact of shipping. The U.S. Department of State projects that if the shipping industry was a country, it would be the eighth largest emitter of greenhouse gas emissions.⁵ If steps are not taken to move aggressively toward a zero-emission goal, then by 2050, emissions from the sector are projected to increase by up to 50% from 2018 levels. Better data visibility and sharing can result in significant emission reductions, and the elimination of fruitless movements by drayage truck driving services because of misinformation, ultimately reducing needless environmental harm.

The Coalition for Reimagined Mobility's report, *Solving the Global Supply Chain Crisis with Data Sharing*, comprehensively examines the benefits of digitalization across the supply chain. Their report proposes a freight industry data standard that streamlines how industry communicates and shares data to make cargo movement more efficiently and recommends the establishment of localized data exchange centers at use ports to help disseminate shipping data.

The reported analysis shows data standards will reduce the cost of shipping goods on average by 6% annually by 2050, and that sharing standardized data will reduce carbon emissions by 22% as well. Increased fuel efficiency, less congestion, and fewer idling ships and trucks will vastly improve air quality for U.S. port communities by cutting toxic air pollutants like nitrous oxide and sulfur dioxide by nearly 40%.

Smart Containers/Next Generation Door-to Door Logistics

During the MTDI process, the advent of full-scale smart container technology by a major ocean carrier began to integrate itself into the supply chain. Smart container technology gathers and transmits GPS and other data that is owned by the container owner. One major carrier has already begun the process of deploying a smart container fleet into the supply chain. Other carriers are planning to launch similar versions of smart containers, and there is a U.S. domestic research initiative sponsored by the U.S. Government, industry and an academic institution that is well underway. The benefits of smart container technology were a main topic of conversation during the June 2022 MTDI Data Summit.

Smart containers provide data regarding location, security breaches, temperature control, tampering, and other sensor data including, but not limited to, being able to visually monitor container contents during transit. Sensor data, as well as GPS data, can be integrated with other cargo data, such as manifest data, to provide a robust real time information to shippers, container lines and other transportation providers. Currently, the U.S. lags China and Europe in this sphere, and currently there are no rules or regulations regarding "smart container" data security and data sovereignty, which could expose U.S. commercial and military shipments to advanced data

⁵ U.S. Department of State Press Release, [Green Shipping Corridors Framework - United States Department of State](#), April 12, 2022.

mining by foreign interests. It is a potential national security threat if left completely unfettered could create substantial jeopardy to national security objectives.

While it is too early to fully understand the impact smart containers may or may not have on the supply chain and individual shippers, experience will provide a better understanding of how this technology will impact the operational movements and security of cargo.

The implementation of MTDS recommendations would help build the value proposition for future smart container usage and will enhance market viability.

Cyber Security/Enforcement

The MTDS recommendations do not make specific recommendations on any new cybersecurity protections. Given that the recommendations do not propose new data sources, it is not appropriate for the FMC specifically address issues already under purview by the U.S. Coast Guard. The U.S. Coast Guard recently released the Maritime Cybersecurity Assessment & Annex Guide (MCAAG), which will help Maritime Transportation Security Act (MTSA)-regulated facilities and other Marine Transportation System (MTS) stakeholders address cyber risks. The MCAAG is a voluntary guide that serves as a resource for baseline cybersecurity assessments and plan development, particularly the Facility Security Assessments (FSA) and Facility Security Plans (FSP) required by MTSA. Proactively steps are underway to generate the necessary cybersecurity protection, however, as better MTDS information becomes available, it will become increasingly necessary to evaluate cybersecurity protections.

Efforts have been underway for the past three years in the ocean carrier industry, through the DCSA, to establish standards for implementation of a track and trace methodology. While this effort is laudable, and in fact provides the basis for the MTDS recommendation for methodology in providing information, it suffers in application from the “first mover’s” syndrome. Actual application of the standards has been hindered by concern that implementation of technology upgrades would not pay-off vis-à-vis competitors that do not choose to invest in upgrades. Voluntary standards are in place right now, but the goal should be to do better. The FMC has recently implemented actions to strengthen its enforcement and compliance functions by establishing the Bureau of Enforcement, Investigations, and Compliance (BEIC). The Commission can encourage industry compliance with proposed recommendations for a MTDS.

Federal Support

While the MTDS recommendation only recommends potential changes within the purview of the FMC’s jurisdiction over ocean shipping, we received many comments through the MTDI process urging federal support to facilitate and push the adoption of best technology. While the FMC does not administer grant programs, other federal agencies that do could help defray costs and incentivize the implementation of best technology. Fundamentally, investment in technology upgrades to enhance cargo movement is relatively inexpensive and can be implemented on a short timetable. Discussions are already underway within the Administration on how to support enhanced levels of technology for data standardization and transmission, and requirements for the standardization of data should provide impetus for federal support. Given, the shorter-term

value propositions of technology enhancements for data standardization and transmission, hopefully, the Administration should be able to support and justify federal investment.

Next Steps

The recommendations contained in this report will continue to evolve. The Commission is in the process of internally reviewing this report and recommendations and considering the mechanism to provide the public and industry with the opportunity to provide feedback and input. In the Summer of 2023, the recommendations, after comment, will be presented to the Federal Maritime Commission. The recommendations urge the Commission to initiate the process to establish regulations for the establishment of a MTDS, and for further public input and consideration consistent with the FMC regulatory process.

Appendix 1.0 MTDS General Information Recommendations

General Information:

Authority:

- **46 U.S.C. § 41102(c)** - “A common carrier, marine terminal operator, or ocean transportation intermediary may not fail to establish, observe, and enforce just and reasonable regulations and practices relating to or connected with receiving, handling, storing, or delivering property.”

Applicability:

- Data requirements will be applicable to all events and status impacts outlined for coverage in the international journey of containerized (TEU/FEU and high cube) cargo from point of receipt of cargo in the United States for export, or the point of receipt of cargo at a foreign nation for import, by a common carrier under a through bill of lading. MTDS data requirements will continue until delivery at inland point destination.
- Data requirements will be applicable to all events and impacts outlined for coverage to the extent of Federal Maritime Commission (FMC) jurisdiction over through transportation under through rate, as defined in 46 U.S.C. § 40102 (25) & (26).
- Data requirements are mandated to be provided as an API.

Best information:

- MTDI system information recommendations will be provided from the best available source of information, and the best source of information resides with the operator or party to the journey is in actual possession of the cargo. To the extent that a common carrier wants to provide information when another operator or party in the journey is in possession of the cargo, the common carrier will provide the same information as provided by the operator or party that has possession of the cargo, or alternatively provided direct access to the same information from the party in possession of the cargo.

Information:

- Data that should be provided will be classified as either available as Open Facing, or Closed Facing.
- Open Facing information is data that will be made available to the public. This information should remain available publicly for 3 months and stored for up to a 2-year period.
- Closed Facing information is data that is business confidential available to the transportation customer and is encrypted and protected by a pin or other security system

and accessible only to those parties legally entitled to access the data and should remain publicly available for 3 months and stored for one year.

Appendix lexicon recommendations:

The MTDS provides a harmonized glossary of terms describing legal activities that should be covered by the Maritime Transportation Data System and establishes the lexicon to describe transportation events and status description for containerized cargo covered by MTDS.

Importantly, the lexicon and information requirements establishing a real-time system of information governing the movement and status of containerized cargo through the entirety of the system would be enforced by regulation in order to harmonize compliance. The following harmonization of definitions that bear special importance are:

- **Detention:** is a penalty charge that is assessed, by a carrier, for use of a container, beyond an allocated period of free time, to incentivize the return of the container. To the extent that a 3rd party collects detention on behalf of a carrier it shall be consistent with the amount charged by the carrier for use of its container more than allocated free time.
- **Demurrage:** is a penalty charge that is assessed, by a terminal operator terminal, for use of storage at the terminal, beyond an allocated period of free time for pick-up, to incentivize the pick-up of the container from the terminal. To the extent that a 3rd party collects demurrage on behalf of a terminal it shall be consistent with the amount demurrage charged by the terminal operator.
- **Earliest Receiving Date:** The earliest receiving date (ERD) is an actual and estimated event where a carrier provides publication information to a terminal for publication that the carrier is estimating real time (ETA) arrival at a terminal berth within five days. The terminal would be required to make this information available to provide terminal access to exporters. Any change to availability caused because of issues related to terminal operating requirements shall be made publicly available by 12 PM the preceding day of business.

Ocean carrier real time information recommendations for common carrier service include the following definitions:

- **Planned:** a carrier or carriers formulates master and long-term schedule that provided public information three months in advance with real time information of notice of blanked sailings time and date stamped.
- **Estimated:** a carriers or carriers, consistent with a long-term schedule, provided public information of the forecasted real time status (ETA), with status information, for the completion time of arrival at berth. The running forecast should be accomplished as soon as safe and feasible after operational decisions are made impacting the completion time, and be time and date stamped.

- ERD ETA: a carrier or carriers shall also provide public information with forecasted real time status, with status information, for the time of arrival (ETA) at berth, five days in advance of arrival at berth, time and date stamped. This information shall be made publicly available by MTO to serve as the earliest receiving date (ERD) for export containers.
- Actual: the vessel of the carrier arrives at berth, time and date stamped.

Marine terminal cargo status recommendations include the following definitions:

- Available: the container has been released by the carrier and the container is capable of physically being moved from terminal. Time and date stamped, with final gate-out time and date stamped.
- Unavailable: the container cannot be moved for any other reason. Time and date stamped.
- On hold: the container cannot be moved pending government inspection. In addition to a time and date stamp indicating the time of change of status, in the event of the container inspection being off-terminal a time and date stamp for gate-out/gate-in and location of the inspection site.
- Cargo handling: the container cannot be moved pending cargo handling/stuffing and stripping/consolidation. In addition to a time and date stamp indicating the time of change of status, in the event of the container handling being off-terminal a time and date stamp for gate-out/gate-in and location of the cargo handling site.
- Demurrage: status of information on commencement of free time and any change to demurrage status, time and date stamped.

Appendix 1.1 **Ocean Carriers Recommendations**

Open Facing information to provide public information through API for ocean transport:

Voyage information – information related to the loading of vessels to be provided on a planned, estimated real time basis (ETA) and actual basis. Recommendations include the following:

- **Planned:** a carrier or carriers formulates master and long-term schedule that provided public information three months in advance of any voyage with real time information of notice of blanked or delayed sailings time and date stamped, in the event of a delayed sailing, the ETA of the new departure.
- **Estimated (ETA):** a carriers or carriers, consistent with a long-term schedule, provide public information of the forecasted real time status, with transportation status information, for the completion time of arrival at berth. The running forecast should be accomplished as soon as safe and feasible after operational decisions impacting the completion time, and be time and date stamped.
- **Estimated Earliest Receiving Date:** a carrier or carriers shall also provide public information with forecasted real time status, with transport event status information, five days in advance of arrival at berth to any terminal planned for service. The terminal shall also make this information publicly available, and this shall serve as the earliest receiving date (ERD) at the terminal. Publicly available carrier and terminal ERD information shall be time and date stamped.
- **Actual:** the vessel of the carrier arrives at berth, time and date stamped.

Ocean carrier vessel voyage information – vessel IMO number; ISO country code of departure; UN locations and facility identification for departure; planned and ETA of all arrival port calls with ISO Country Code and UN locations and facility identification for arrival.

- **Transport event status** – position information related to the status of transport of the vessel from the commencement of the voyage on a real-time basis. To be accompanied with vessel operating status as regular, slow speed, idling or anchorage, at berth outside of the U.S. with status of arrival and ETA for departure from berth; reasons for delay provided pursuant to the SMDG (“Ship Message Design Code”) Delay Reason Code.
- **Port of discharge events** – a carrier or carriers shall provide status information related prior to commencement of the unloading/loading of vessel which shall be described under one of the four MTDS lexicon described categories of port call phases, as either: in-bound, shifting, alongside, or outbound.
- **Unloading/loading at berth events** – a carrier or carriers shall provide actual real-time notice of unloading and loading while at berth consistent with MTO information on loading and unloading, or by providing access to MTO information.

- **Subsequent planned port calls** – a carrier or carriers shall provide the same planned, estimated, and actual information related for each round-trip voyage until completion of the journey.
- **Ocean carrier open and closed face information on status of cargo while in subsequent possession of MTO's and intermodal rail carriers** – a carrier or carriers shall provide consistent information on cargo status as provided by the subsequent MTO service provider or intermodal rail carrier that is in possession of the cargo or provide direct access to the MTO or rail carrier cargo status information.

Appendix 1.2 Marine Terminal Operator Recommendations

Open Facing Information to be supplied by Marine Terminal Operators:

Earliest receiving date (ERD) - a Marine Terminal Operator (MTO) shall make publicly available information provided by a carrier or carriers or provide data consistent from a carrier or carriers that shall serve to provide notice to cargo of the earliest receiving date (ERD) for any ocean carriers that will provide scheduled service to an MTO berth five days from the carriers real-time estimated (ETA) arrival to berth. Any change to availability for cargo delivery caused because of issues related to terminal operating requirements shall be made publicly available by 12 pm the preceding day of business. Information related to change of status of an ERD shall be time and date stamped.

- **Notice of commencement and ending of loading/unloading** – a MTO shall make publicly available actual real time information on carrier arrival by vessel name and IMO number; ISO country code of departure with real time information on the commencement of loading and unloading operations and the end time for those operations.
- **On-dock rail departures** – a MTO shall make publicly available actual real time information within 12 hours of scheduled local work related to the loading and unloading of an intermodal train consist, and estimated EST on departure.
- **Notice of MTO availability and operating requirements** – a MTO shall make publicly available information on access to its facility for import, export and empty containers, including information related to any operational changes at the facility that impede or enhance the ability to pick up or deliver containers to or from the facility. This information should be provided daily and posted 12:00 pm the preceding day of business. Any changes to this information should be made publicly available on a real-time basis as soon as safe and feasible after operational decisions has been made to change policy, and time and date stamped. Specific information that should be made publicly available is as follows:
 - **Appointments process:** a MTO shall make publicly available information on the availability of appointments by 12:00 pm the preceding day of business. The information should clearly define the process of securing, altering, or cancelling an appointment and any other business process attendant to the use of the appointment system. Any changes to this information should be made publicly available on a real-time basis as soon as safe and feasible after operational decisions has been made to change policy, and time and date stamped.
 - **Terminal access:** a MTO shall make publicly available information on the availability of appointments by 12:00 pm the preceding day of business. This information should clearly define the process of securing access into the terminal. This should clearly define restriction on access related to policies restricting cargo movement due to dual use restrictions, restrictions on the return of empty containers or other policies that restrict access into the terminal. Any changes to

this information should be made publicly available on a real-time basis as soon as safe and feasible after operational decisions has been made to change policy, and time and date stamped.

- **Intermodal equipment:** a MTO shall make publicly available information on restrictions on access to the terminal based on the availability or non-availability of intermodal equipment necessary for movement or handling cargo, by 12:00 pm the preceding day of business. This information should clearly define restrictions or the availability of access to intermodal chassis, or equipment for refrigeration storage, or other service restrictions that could impede cargo handling in the terminal on access to intermodal equipment or services necessary to move containerized cargo. To the extent that a third party provides this service the MTO shall provide the same information as provided by the third party, or alternatively provide direct access to the information from the third party. Any changes to this information should be made publicly available on a real-time basis as soon as safe and feasible after operational decisions has been made to change policy, and time and date stamped.
- **Off-site storage or special operating conditions:** a MTO shall make publicly available information on unique or special operational conditions requiring special operating procedures for access to a terminal or cargo at a terminal caused by force majeure or non-routine operational events. This information should clearly define the operational requirements being used to address the handling of cargo. To the extent that a third party provides address the changes to regular operation the MTO shall provide the same information as provided by the third party, or alternatively provide direct access to the information from the third party. Any changes to this information should be made publicly available on a real-time basis as soon as safe and feasible after operational decisions has been made to change policy, and time and date stamped.

Closed Facing information on cargo status during MTO custody:

- **Closed Facing information** – is data that is business confidential available to the transportation customer and is encrypted and protected by a pin or other security system and accessible only to those parties legally entitled to access the data. In the case of a terminal this will be primarily ocean carriers, shippers and agents representing shippers.
- **Status of cargo during MTO custody** – a MTO shall ensure that any party entitled to receive the following Closed Facing information on cargo status of each container in the terminal. Generally, each container will be classified in only one of the following four status categories noted below, status and notice of status should be time and date stamped and retained available consistent with Open Facing publication requirements (made available for up to three months and stored for one year). Categories of status are as follows:

- **Available:** is when the container has been released by the carrier and is capable of physically being moved from terminal;
- **Unavailable:** is the default designation when the container cannot be moved for any other reason and is not in any other status;
- **On hold:** is when the container cannot be moved pending government inspection. In addition to a time and date stamp indicating the time of change of status, in the event of the container inspection being off-terminal a time and date stamp for gate-out/gate-in and location of the inspection site; and/or
- **Cargo handling:** is when the container cannot be moved pending cargo handling/stuffing and stripping/consolidation. In addition to a time and date stamp indicating the time of change of status, in the event of the container handling being off-terminal a time and date stamp for gate-out/gate-in and location of the cargo handling site.
- **Status of free time and demurrage during MTO custody of cargo** – a MTO shall ensure that any party entitled to receive Closed Facing information on cargo status is entitled to receive information on the amount of free time, commencement of demurrage, and any enhanced demurrage payment for each container in the terminal. Notice of status should be time and date stamped and retained available consistent with Open Facing publication requirements (made available for up to three months and stored for one year).

Appendix 1.3 Port Operations Coordination Recommendations

General information and applicability:

- **Applicability** – a U.S. port authority, who handles, or whose terminal tenants handle over 250,000 TEU’s of import, export, and empty containers in any one year, would establish a Ports Operations Coordination (POC) process. The POC process shall include the following two elements as enumerated below: 1) POC MTDS information and 2) POC coordination.
- **Port coordination** – a U.S. port may choose to coordinate with another nearby port.
- **Voluntary application of MTDS** – a U.S. port not subject to MTDS requirements may apply to the FMC to be made subject to MTDS requirements.
- **Best information available** – data will be provided from the best available source of information, and the best source of information resides with the operator or party to the journey is in actual possession of the cargo. To the extent that a party wants to provide information when it is not in actual possession of the cargo, the party will provide consistent information as provided by the operator or party that has possession of the cargo, or alternatively, provided direct access to the party in possession of the cargo.

POC MTDS Information:

- The primary intent in the establishment of the POC is for coordination in the transmission of information of ocean carriers, MTO’s and intermodal rail carriers. The POC is to provide a central repository of data affecting port and inland terminals and other facilities that service affected ports. The focus will be to coordinate the best available data from ocean and intermodal carriers, and marine terminals, as follows:
- **Open Facing information to be supplied by POC from:**
 - Carriers – the POC MTDS should provide open face publicly available information from all carriers subject to MTDS requirements that intend to provide service at a terminal berth in their port.
 - MTOs – the POC MTDS should provide open face publicly available information from all MTO’s subject to MTDS requirements that intend to provide service at a terminal berth in their port.
 - Intermodal rail carriers - the POC MTDS should provide open face publicly available information from all intermodal rail carriers, subject to MTDS requirements, that carry inland intermodal containers that were provided service at a terminal berth in their port.

- Special operating conditions – the POC MTDS should provide open face publicly available information to inform the shipping public to information to help alleviate issues arising from force majeure events or other market factors that could impede normal cargo handling operations. The information should either be intended to alert to potential unusual conditions, or to inform of special operating practices that were being implemented to respond to the unusual conditions. This information should be formulated pursuant to the POC coordination process.
- POC berthing information – the POC MTDS should open face publicly available information to ocean carriers to inform them on the best source of information to secure information on any potential delay in securing berth availability. This information is to be used by the carrier in formulating their ETA to berth forecasted arrival time.
- Intermodal service providers – the POC MTDS should provide open face publicly available information from all intermodal service providers pursuant to the POC coordination process.

POC Coordination Process:

General information:

The POC process is intended to require the facilitation of open transmission of information from ocean carriers, intermodal carriers, and the MTOs that handle containerized cargo through their port complex, to facilitate access to information related to securing berth access and related services for ocean carriers, and to provide port-wide information related to special operating conditions. In addition to help coordinate services provided to assist in the movement of intermodal cargo through the supply chain, the MTDS would propose the issuance of guidelines for port service coordination as outlined below.

POC Coordination Process:

- Commission guidelines – Given the unique challenges in managing services at each U.S. port, and the wide variety of differences between ports, the MTDI recommendation calls for, at present, the implementation of voluntary guidelines for each port to consider as they implement MTDS standards for in-transit visibility and transparency. Each port has different needs for coordination, for instance, an operating port functioning as an MTO will have completely different need for coordination from a landlord port, and similarly a smaller port has much different challenge from a larger port complex. Accordingly, the MTDI recommendation, at present, will call for each port subject to the requirements of the MTDS to exercise good faith efforts to implement a POC coordination process responsive to the needs of their port, and the implementation of FMC guidelines port coordination.

- Elements of POC process guidelines:
 - Establishment of relevant and pertinent stakeholders impacting intermodal movement of cargo to provide advice on coordinating intermodal services. This should include, but is not limited to; ocean carriers, MTO's, intermodal rail carriers, longshore labor, drayage trucking companies, intermodal equipment service providers, major BCO's and shipper intermediaries using the port complex, major off-terminal storage or handling sites, transloading facilities warehousing or other distribution centers directly impacting and intermodal container service through the port complex.
 - Establishment of a protected and confidential process to consider issues impacting the adequate and efficient movement of intermodal container service, with respect to information on those intermodal container services directly impacting operations through the port.
 - Issues of consideration and advice through the POC process should include, but is not limited to:
 - Forecasted and projected carrier and cargo service levels.
 - Adequacy of drayage trucking and intermodal equipment.
 - Policies related to making essential information publicly available from third party service providers of intermodal services (i.e., warehouses, storage facilities, distribution centers).
 - Recommendations and advice for changes to policies impacting cargo handling operations.
 - Equipment returns policies.
 - Response to special conditions or force majeure events.
 - Other market factors that could impede normal cargo handling operations.
 - Shipper obligations/best practices.
- Special operating conditions – the POC shall provide open face publicly available information to inform the shipping public of information to help alleviate issues arising from force majeure events or other market factors that could impede normal cargo handling operations. The information should either be intended to alert to potential unusual conditions, or to inform of special operating practices that were being implemented to respond to the unusual conditions. This information should be formulated with advice and pursuant to the POC coordination process.

Appendix 1.4 Intermodal Rail Carriers Recommendations

General information and applicability:

- **Applicability** – MTDS data requirements would be applicable to intermodal rail carriers that provide intermodal transportation from a U.S. port that is subject to MTDS, to points inland under a through bill of lading issued by an ocean carrier. Intermodal rail carriers and the rail ramps/terminals that provide transportation service to and from a U.S. port subject to MTDS requirements if they imported or exported from that port and handle over 250,000 TEU's annually on a cumulative basis to an inland rail ramp/terminal.

Open Facing information to provide for intermodal rail:

- **Train departures** – A intermodal rail carriers, subject to the MTDS, will post information within 12 hours of scheduled local work related to the loading and unloading of an intermodal train consist, and estimated EST on departure.
- **Train arrivals** – a intermodal rail carrier will make publicly available information within 12 hours of projected scheduled local work related to the loading and unloading of an intermodal train consist, and estimated EST of arrival.
- **Notice of rail ramp/terminal availability and operating requirements** – a rail ramp/terminal, providing services to an ocean carrier under a through bill of lading from a MTDS covered port, shall make publicly available information on access to its facility for import, export and empty containers, including information related to any operational changes at the facility that impede or enhance the ability to pick up or deliver containers to or from the facility. This information should be provided daily and posted 12:00 pm the preceding day of business. Any changes to this information should be made publicly available on a real-time basis as soon as safe and feasible after operational decisions has been made to change policy, and time and date stamped. Specific information that should be made publicly available is as follows:

- **Appointments process:** a rail carrier, subject to the MTDS, shall make publicly available information on the availability of appointments at their rail ramp by 12:00 pm the preceding day of business. The information should clearly define the process of securing, altering, or cancelling an appointment and any other business process attendant to the use of the appointment system.

Any changes to this information should be made publicly available on a real-time basis as soon as safe and feasible after operational decisions has been made to change policy, and time and date stamped.

- **Terminal access:** a rail carrier, subject to the MTDS, shall make publicly available information on the availability of appointments by 12:00 pm the preceding day of business. This information should clearly define the process of securing access into the rail ramp. This should clearly define restriction on access

related to policies restricting cargo movement due to dual use restrictions, restrictions on the return of empty containers or other policies that restrict access into the terminal. Any changes to this information should be made publicly available on a real-time basis as soon as safe and feasible after operational decisions has been made to change policy, and time and date stamped.

- **Intermodal equipment:** a rail carrier, subject to the MTDS, shall make publicly available information on restrictions on access to the terminal based on the availability or non-availability of intermodal equipment necessary for movement or handling cargo, by 12:00 pm the preceding day of business. This information should clearly define restrictions or the availability of access to intermodal chassis, or equipment for refrigeration storage, or other service restrictions that could impede cargo handling in the terminal on access to intermodal equipment or services necessary to move containerized cargo. To the extent that a third party provides this service the rail carrier shall provide the same information as provided by the third party, or alternatively provide direct access to the information from the third party. Any changes to this information should be made publicly available on a real-time basis as soon as safe and feasible after operational decisions has been made to change policy, and time and date stamped.
- **Off-site storage or special operating conditions:** a rail carrier, subject to the MTDS, shall make publicly available information on unique or special operational conditions requiring special operating procedures for access to a terminal or cargo at a terminal caused by force majeure or non-routine operational events. This information should clearly define the operational requirements being used to address the handling of cargo. To the extent that a third party provides address the changes to regular operation the MTO shall provide the same information as provided by the third party, or alternatively provide direct access to the information from the third party. Any changes to this information should be made publicly available on a real-time basis as soon as safe and feasible after operational decisions has been made to change policy, and time and date stamped.

Closed Facing information on cargo status during rail carrier custody:

- **Closed Facing information** – is data that is business confidential available to the transportation customer and is encrypted and protected by a pin or other security system and accessible only to those parties legally entitled to access the data. In the case of a rail carrier this will be primarily ocean carriers, shippers and agents representing shippers.
- **Railroad Transport Events** – a railroad carrier shall provide Closed Facing information on position information related to the status of transport of the railroad from the commencement of the voyage on actual real-time basis with real-time EST for arrival at the intermodal terminal.

- **Status of cargo during rail carrier custody** – a rail carrier shall ensure that any party entitled to receive the following Closed Facing information on cargo status of each container in the terminal. Generally, each container will be classified in only one of the following four status categories noted below, status and notice of status should be time and date stamped and retained available consistent with Open Facing publication requirements (made available for up to three months and stored for two years). Categories of status are as follows:
 - **Available:** is when the container has been released by the carrier and is capable of physically being moved from terminal.
 - **Unavailable:** is the default designation when the container cannot be moved for any other reason and is not in any other status.
 - **On hold:** is when the container cannot be moved pending government inspection. In addition to a time and date stamp indicating the time of change of status, in the event of the container inspection being off-terminal a time and date stamp for gate-out/gate-in and location of the inspection site.
 - **Cargo handling:** is when the container cannot be moved pending cargo handling/stuffing and stripping/consolidation. In addition to a time and date stamp indicating the time of change of status, in the event of the container handling being off-terminal a time and date stamp for gate-out/gate-in and location of the cargo handling site.

- **Status of free time and demurrage during intermodal rail carrier custody of cargo** – a rail carrier, subject to the MTDS, shall ensure that any party entitled to receive Closed Facing information on cargo status is entitled to receive information on the amount of free time, commencement of demurrage, and any enhanced demurrage payment for each container in the terminal. Notice of status should be time and date stamped and retained available consistent with Open Facing publication requirements (made available for up to three months and stored for two years).

Appendix 1.5 National Shipper Advisory Committee Recommendations on Data

Recommendation: Require Ocean carriers to publish these container level data elements maintaining historical time stamps of milestones in a public format for 180 days and accessible for up to two years.

Minimum required U.S. Export Cargo Data Set:

- Empty pickup container yard location
- Empty pickup date
- Loaded container location and earliest return date
- Loaded container ingate return
- Last free port demurrage date
- Last free equipment detention date
- Actual origin departure date
- Port of transshipment, when applicable
- Estimated arrival at port of transshipment
- Actual arrival at port of transshipment
- Actual departure from port of transshipment
- Additional unplanned transshipment information
- Estimated arrival at port of destination
- Actual arrival at port of destination
- Vessel berthing date at port of destination
- Container unloaded at port destination
- Container location on terminal
- Container pickup available date

Minimum required U. S. Import Cargo Data Set:

- Loaded container origin terminal ingate date
- Estimated origin departure date
- Actual origin departure date
- Port of transshipment, when applicable
- Estimated arrival at port of transshipment
- Actual arrival at port of transshipment
- Actual departure from port of transshipment
- Additional unplanned transshipment information
- Estimated arrival at port of destination
- Actual arrival at port of destination
- Vessel berthing date at port of destination
- Container unloaded at port destination
- Container location on terminal
- Container Hold details (when applicable)

- Carrier holds
- Terminal holds
- Customs holds
- Container pickup available date
- Container last free port demurrage date
- Container last free equipment detention date
- Laden container out gate – include trucker SCAC & chassis number
- Empty ingate return date – include trucker SCAC & chassis number

NSAC’s recommendation: If this data set is not followed by all ocean carriers and provided in a timely manner, it should be considered an unreasonable practice by the Federal Maritime Commission. For these reasons, we, as the unified National Shipper Advisory Committee, hereby recommend that the Federal Maritime Commission initiate rulemaking to require the data alignment for specific container detail prior to and while in the ocean carriers' network.

<https://www.fmc.gov/wp-content/uploads/2023/02/CommissionResponseData.pdf>

Appendix 1.6 List of MTDI Meetings and Participants

Drayage Trucking: December 14, 2021

- Tom Heimgartner, CEO, Best Transportation
- Robert Loya, COO, TGS
- Eric Wright, Vice President, Washington Trucking Associations
- Will Connell, President, Gulf Intermodal Services, LLC
- Jarrett Cooper, President, BW Mitchum
- Michael Caney, Savannah Port City Logistics

Warehouse, Distribution Centers, 3rd Party Logistics Providers: - January 11, 2022

- Doug Sibila, CEO, Peoples Services, Inc
- Alex Guzman, Customer Service Manager, Interport Logistics
- Jared Stadlin, President, Linden Warehouse & Distribution Co., Inc
- Brett Mears, Owner, Palmer Logistics
- Jeremy Van Puffelen, President, Prism Logistics

Beneficial Cargo Owners: - January 18, 2022

- Michael Brock, Senior Director II Inbound Transportation, Walmart
- Randy Strait, Senior Director, Transportation Meat & Pork, Tysons
- Nadia Scornaienchi, North America Supply Chain Director, International Trade Operations at Dow Inc Dow Chemical
- Bryan Ward, Senior Director International Logistics, Home Depot
- Dan Miller, Global Container Lead, Cargill
- Patricia Ritz, Senior Director, International Logistics, Target

Chassis Industry: - January 25, 2022

- Ron Widdows, President/CEO, FlexiVan
- Daniel Walsh, President/CEO, TRAC Intermodal
- Mike O'Malley, Senior Vice President, Government & Public Relations, Human Resources, DCLI

Railroads: - February 1, 2022

- Scott C. Hernandez, Assistant Vice President, Intermodal/Automotive Service Design & Equipment, BNSF
- Jay Strongosky, Director, International Intermodal Sales, CSX
- D'Andrae Larry, Group Vice President, International Marketing and Sales, Norfolk Southern
- Jim L. Bishop, Director International Sales, Union Pacific

Federal Partners (USDOT/CBP/Commerce/Agriculture/Census): - February 8, 2022

- April Taylor, Economist, Transportation Services Division, USDA/AM U.S. Department of Agriculture
- Matthew Chambers, Senior Transportation Specialist, U.S. Department of Transportation Bureau of Transportation Statistics

- Olivia Volkoff, Policy Advisor, Office of the Secretary, Office of Policy and Strategic Planning, U.S. Department of Commerce
- Jim Swanson, Director, Cargo Security and Controls, Cargo and Conveyance Security Division, Office of Field Operations, U.S. Customs and Border Protection
- Berin Linfors, Chief, Commodity Flow Branch, U.S. Census Bureau

Ocean Transportation Intermediaries (Forwarders and NVOCCs): - February 15, 2022

- Butch Connor, Vice President, John S. Connor, Inc.
- Michelle Fajardo, President, Cargo International Consolidators, Inc.
- Terry Maready, Chief Information Officer, Mallory Alexander
- Alan E. Baer, President OL USA LLC

FedEx/Amazon: - February 22, 2022

- Cindy Allen, Vice President Regulatory Affairs & Compliance, FedEx Logistics
- Adnan Qadri, Director Global Imports-Network Planning and Infrastructure, Amazon

Large Aggregators: - March 1, 2022

- Steve Lee, Vice President of Regulatory and Trade Compliance, Flexport
- Chris Penley, Director Global Operations, C.H. Robinson
- Phil Denning, Vice President, U.S. Sea Logistics Operations, Kuehne + Nagel Inc.

Maritime Labor: - March 8, 2022

- Alan Robb, President, South Atlantic Gulf Coast District, International Longshoremen's Association
- David Cicalese, Executive Vice President, International Longshoremen's Association
- Mike Podue, Labor Relations Representative (LA/LB), International Longshore and Warehouse Union Local 63
- Dane Jones, Clerks' Technology Coordinator, International Longshore and Warehouse Union

Data Solutions: Available Technology/Platforms: - March 15, 2022

- Tim McLaughlin, Vice President, Trade Analytics & Industry Solutions Maritime & Trade, IHS Markit
- Tom Holwell, Product Manager, Government, Lloyd's List Intelligence
- Miles J. Varghese, Co-founder & CEO, CargoLogic,
- Gordon Downes, Chief Executive Officer, NYSHEX

International Standards: March 22, 2022

- Gordon Gillerman, Director, Standards Coordination Office, National Institute of Standards and Technology and U.S. Department of Commerce Standards Executive
- Tom Sproat, Senior Director of Global Network Development, Tradelens
- Dominique Willems, Head of Public Affairs & Government Relations Digital Container Shipping Association

Marine Terminal Operators

Marine Terminal Operators (Part 1) - March 29, 2022

- Anthony Otto, President and CEO Long Beach Container Terminal, LLC
- Steve Rauch, Senior Director Information Technology, South Carolina Ports Authority
- Mark Higgins, Director of Motor Carrier Experience, The Port of Virginia.
- Jeff Davis, Chief Port Operations Officer, Port of Houston
- Hyun Jung (HJ) Yoon, Chief Commercial and Strategy Officer, Yusen Terminals

Marine Terminal Operators (Part2) - April 5, 2022

- Thomas “TJ” Rucker, Vice President, SSA Marine Inc.
- John Atkins, President, Global Container Terminals USA
- Griff Lynch, Executive Director, Georgia Ports Authority
- Kris Calkins, CEO, New Orleans Terminals
- Jose Alfredo Peto Martínez, LAM /NAM Data & Analytics Lead, APM Terminals
- Richard Spohn, Director of Revenue Analysis, Seaboard Marine Ltd

Ocean Carriers

Ocean Carriers (Part 1) - April 12, 2022

- Andrew Donohue, Vice President of Customer Service, OOCL
- Violeta Chan, Business Coordination Department, Evergreen Shipping Agency (America) Corp
- Andre Simha, Global Chief Digital & Information Officer, MSC Mediterranean Shipping Company
- Sandeep Govil, Head of North America Revenue Management, Hapag-Lloyd
- John Stone, Vice President, BPIT Strategy & Innovation, Ocean Network Express North America
- John Lauer, Executive Vice President and Chief Commercial Officer, Matson
- Dharmesh Patel, Vice President & Chief Information Officer, CMA CGM

Carriers (Part 2) - April 19, 2022

- Simon (SH) Park, Head of Information Technology Department, HMM America Inc.
- Leo Chiang, Information Technology & Business Process Group, Yang Ming (America) Corp.
- Roman Ramirez, Director Sales ,Operations & Yield Management ZIM Integrated Shipping Services Co, LLC (US)
- Jake Meehan, Head of Ocean EDI Integration, Maersk
- Kathi Scott, Vice President of Shipping Information Technology Digital Business, Crowley
- Tom Takase, Vice President, COSCO Shipping Lines (North America) Inc.

Appendix 1.7 MTDI Lexicon

Actual (event)	An event is a service in the process of being completed, along with a real-time estimation (ETA) of completion of service; or the time that it completed the service, in accordance with the definition of the relevant event type. It should be time and date stamped and provide supporting status information.
Administrative clearance	The process of getting the necessary permits (written, electronic or informal) to be compliant with relevant local legislation including customs, immigration, health, cargo operations, and security.
Also notify	A party (person or company) who should also be notified of the arrival of the cargo along with the notified party.
Arrival	<p>Arrival is the event which occurs, when a mode of transport reaches its final or intermediate destination, and the mode of transport is ready for load/discharge operations to begin at the specified location. Depending on the mode of transport arrival will have different definitions:</p> <ul style="list-style-type: none">• Vessel: a vessel has arrived once the vessel is berthed at the port terminal.• Rail: a rail transport has arrived once the transport is stationary at the intended platform or rail head.• Truck: a truck has arrived once the truck is stationary in front of the loading dock or other loading facility.
Arrival notice	Notification to the notifying party (often the consignee and/or notify party) on the estimated arrival time of the shipment.
Barge	A flat-bottomed floating structure built mainly for transport of cargo/equipment at coastal areas, rivers, canals or on open sea. A barge may or may not be self-propelled.
Bayplan	The bayplan is the complete overview of containers stowed on the vessel. This includes slots for each container. It is provided by the terminal to the vessel operator, who will distribute it further, if needed. The associated EDI-message, Baplie, is often used instead of the term bayplan.
Berth	The space assigned to or taken up by a ship when anchored or when lying alongside a quay, wharf, jetty, or other structure.
Berth information	Information made publicly available through the Port Operations Coordination process to provide information on the appropriate

point of contact for information related to future berthing at a port. Berth information should be used to help formulate the carrier's forecasted estimate of arrival at berth.

Berth location	A specific position within a berth identified by a physical or electronic marker or measurement (e.g., bollard, manifold, ramp number, meters, GPS) allowing the ship to be correctly positioned within the berth.
Best information	The best source of information on intermodal shipping is the party in possession of the container. Information made available to the public should be sourced from the best available source. If a third party not in possession of a container provides information on intermodal shipping it should either provide direct access to the party in possession of the container, or consistent with information to the party in possession of the container.
Bill of Lading (B/L)	Contractual document issued to the shipper which confirms the carrier's receipt of the cargo, acknowledging goods being shipped or received for shipment and specifying the terms of delivery (as evidence of the contract of carriage). The Bill of Lading is usually prepared based on shipping instructions, including cargo description, given by the shipper on forms issued by the Carrier and is the title to the goods and can be a negotiable document.
Blank Sailings	Occurs when a an already planned voyage is cancelled. In this case the voyage number is not retained, and planned port calls are "blanked", and publicly noticed as a planned activity as soon as safely feasible given operational safety.
Booking	A reservation of space and/or equipment for a vessel/voyage and possibly inland transport with a specific origin/destination/equipment type and commodity.
Booking confirmation	A confirmation by the carrier to the customer including rate agreement, space allocation, transport plan and empty equipment release instruction.
Booking request	A request for reservation of space and equipment for a vessel/voyage and possibly inland transport.
Bunkering operations	The processes defined in the IMO/IGF Code as "the transfer of liquid or gaseous fuel from land- based or floating facilities into a ship's permanent tanks or connection of portable tanks to the fuel supply system".

Cargo gross weight	The grand total weight of the cargo and weight per container(s) including packaged items being carried. Excludes the tare weight of the container(s).
Cargo operations	The activity of discharging, shifting, loading, and lashing containers (both full and empty) as well as other cargo from/to a vessel during port stay. Normally quantified with a move-count and number of moves per hour.
Cargo survey	The act of documenting details on the cargo on behalf of the carrier, customer, or authorities. This could be the measurement of an out of gauge shipment, packing of dangerous goods or any element which requires specific documentation of the physical condition of the cargo.
Carrier	Carrier means any person, organization or government undertaking the transport of goods by any means of transport.
Carrier booking number	A unique number assigned to a scheduled transportation movement which allocates assets, space needed and a transport plan.
Carrier cargo release	The action of allowing cargo to leave the container yard typically authorized by the carrier. This is often confused with gate-out, but cargo release is the authorization necessary before shipments can be allowed to gate-out.
Carrier haulage	The inland transport service, which is performed by or on behalf of the ocean carrier under the contract of carriage terms and conditions (TBL: 'through bill of lading').
Commodity	Description of the cargo loaded into a container. Often described using the Harmonized System-classification system.
Completed	A status indicator that can be used with a number of activity identifiers to denote that a certain activity, service, or document has been completed.
Confirmed	An indicator that a document or request issued to a third party has been registered by the third party and that an affirmative message has been sent by the third party (the confirming party).
Consignee	The party to whom a cargo is consigned under a contract of carriage or a transport document or electronic transport record. It can be the end receiver.

Consolidated B/L	Sometimes referred to as Combined B/L or multimodal B/L. When you combine two or more sets of bills of lading into a single bill of lading. Requires all B/L sets to be surrendered.
Container Freight Station	A facility where less than container load (LCL) shipments are consolidated or deconsolidated and where cargo is stuffed into containers prior to shipment or stripped from containers prior to release to consignee.
Container grade	The classification system used by carriers internally to define the general appearance and condition of a piece of equipment.
Container number	A unique identifier of the container used to carry the cargo. The length/type of the sequence can be different for shipper's owned containers. Container number includes a unique serial number (with check digit), the owner, a country code, a size, type, and equipment category as well as any operational marks. The standard is managed by the Bureau of International Containers (BIC).
Container tare weight	The weight of an empty container.
Container type	A specification of the type of container/equipment e.g., dry, reefer, open-top etc. based on ISO code 6346.
Container Yard	A place where containers are stored on the terminal or dry port (rail ramp) before they are loaded or offloaded from a ship. Containers are either stored for loading to be transported elsewhere or offloaded as they arrive into the port, terminal, or rail ramp.
Customer	The entity who purchases goods or services from the carrier.
Customer location	The premises of the customer. This can be the premises of either the shipper or the consignee.
Customs Inspection	Activity identifier that is used to denote the status of a shipment and/ or container regarding inspection by the respective customs authorities. It can have a status of "on hold" or "released."
Customs manifest	Document that lists in detail all the bills of lading issued by a carrier, its agent or master for a specific voyage and port call. It is a detailed summary of the total cargo of a vessel and is used principally for customs purposes.
Cut-off	The latest point in time where a container must be delivered to a terminal to be loaded on a vessel, or where certain documentation

must be provided by the Shipper. Example: CY cut-off, FCL cut-off, VGM cut-off, DG cut-off."

Dangerous goods (DG)	Dangerous goods mean the substances, materials and articles covered by the IMO/IMDG Code.
Delayed Sailings	Occurs when an already planned voyage is delayed. In this case the voyage number will be retained and planned port calls with a real time ETA will be publicly noticed as a planned activity as soon as safely feasible given operational safety.
DG certificate	A certificate that documents that the underlying cargo has been stored and stowed in a manner which is compliant with existing standards and rules. This could also contain a verification of weight and measurements of the given cargo. This is issued as a result of a cargo survey.
DG declaration	Document issued by a shipper (consignor) in accordance with applicable conventions or regulations, describing hazardous goods or materials for transport purposes, and stating that the latter have been packed and labelled in accordance with the provisions of the relevant conventions or regulations.
Date of issue date	When the original bill of lading has been issued.
Declared value	Filled out when the shipper declares the value of the cargo in order to avoid the carrier's limitation of liability and "Ad Valorem" freight is paid, i.e. freight which is calculated on the basis of the value of the goods declared by the shipper.
Delivery	The action of delivering a container to a customer location. The delivery is completed once the possession of the container is legally transferred to the customer from the carrier/hauler.
Demurrage	Is a penalty charge that is assessed, by a terminal operator, for use of storage at the terminal beyond an allocated period of free time for pick-up. To the extent that a 3 rd party collects demurrage on behalf of a terminal it shall be consistent with the amount demurrage charged by the terminal operator.
Departure	Departure is the event which occurs when a mode of transport leaves a place of operations. The different mode of transport different are:

- Vessel: Departure has been completed once the last mooring has been released.
- Rail: Departure has been completed once the rail transport is no longer stationary in front of the platform or rail head.
- Truck: Departure has been completed once the truck is no longer stationary in front of the loading dock or loading facility.

Depot	A designated area where empty equipment is stored between use.
Description of goods	Also named “cargo description; The cargo description includes details which accurately and properly describe the cargo being shipped in the container(s) as provided by the shipper.
Detention	Is a penalty charge that is assessed, by a carrier, for use of a container, beyond an allocated period of free time for container return. To the extent that a 3 rd party collects detention on behalf of a carrier it shall be consistent with the amount charged by the carrier for use of its container.
Discharge	The action of lifting cargo or containers off a mode of transport. Discharge is the opposite of load.
Discharge instructions	The list of containers that should be unloaded during a port call. This list is provided by a carrier to a terminal. The terminal is consolidating the Discharge Instructions from all container operators that have slots on the vessel.
Drop off	An Event Type that identifies a plan or request has been made to deliver a container or shipment to a Customer Location. This Event Type may be accompanied by a Planned or Estimated time to indicate when the delivery to Customer Location is estimated or planned to take place, or as an actual event if it has already taken place.
Earliest return date	The earliest return date (ERD) is an actual and estimated event where a carrier provides publication and notice to a terminal for publication that the carrier is estimating real time arrival at a terminal berth within five days. The Terminal shall make this information available to provide terminal access information available to exporters. Any change to availability caused because of issues related to terminal operating requirements shall be made publicly available by 12 pm the preceding day of business.

EDI booking	A booking received via electronic data interchange, meaning that the booking data flows automatically into the carriers' booking system.
Empties	Container or equipment currently not stuffed. Empty containers are considered empty once all cargo have been removed and cleaning has been performed according to carrier standards, this includes the period before stuffing occurs.
Endorsement	An endorsement is a signature/stamp at the back of the B/L; it is used to transfer the title of the goods from: shipper to consignee or: consignee to a new consignee by stamping, signing and dating the original bill of lading and handing it over physically or digitally. This can only be done by the current title holder. It is a legal signature transferring the rights from the holder to another party.
Equipment	Used for storing cargo in/on during transport. The equipment "size/type" is defined by the ISO 6346 code. The most common equipment size/type is 20'/40'/45' Dry Freight Container, but several different versions exist.
Equipment discharge	Confirmation & receipt of the equipment loaded/discharged on a vessel during a port call. This information is recorded by the terminal operator and send to the carrier. This is often done using the EDI message - COARRI. The COARRI message reports that the equipment specified have been discharged from a seagoing vessel (discharged as ordered, over landed or short landed), or have been loaded into a seagoing vessel.
Estimated (event)	A carrier's (ETA) forecasted real time status and completion time of an event that is covered by a confirmed booking but has not yet been completed. The estimated event is a dynamic value, which can change based on the running forecast of the completion time. The running forecast should be accomplished as soon as safe and feasible after operational decisions impacting the completion time, and be time and date stamped.
Export reference no.	Identification number provided by shipper.
Facility	The facility is a location entity at sub-level to UN Location Code and provides the locational context to the event, which is being reported on. For instance, an inland depot or a terminal.
Facility type	The facility type entity provides the functional context to the event, which is being reported on. The facility types are defined as unique

types of areas, where equipment can be located for a specified period.

Feeder operator	An entity operating a feeder service - ref. feeder vessel.
Feeder vessel	A vessel which connects the main ports (hubs) with small ocean or inland ports. A feeder vessel usually only operates in a small, defined regional area.
Forwarding agent	A forwarding agent is a person or company that dispatches shipments via a common carrier and otherwise arranges space for shipments, and processes documentation or performs related activities incident to those shipments.
Free Trade Zone (FTZ)	A part of the territory of a state (a seaport or an inland place) where any goods introduced are generally regarded, in so far as import duties and taxes are concerned, as being exempted. Duties are imposed on the merchandise (or items manufactured from the merchandise) only when the goods pass from the zone into an area of the country subject to the Customs Authority.
Freight payable at	The location where payment will take place by the customer. Usually refers to Basic Ocean Freight alone.
Freight payer	The party responsible for settling payment of freight to the carrier.
Full (container)	Containers are considered full once the stuffing is complete regardless of, whether the containers have room for additional cargo. This means the container is considered full even if it is only stuffed with less than full load or partial loads. The event is completed once a valid seal has been applied to the container doors.
Gate-in	The action, when a container is introduced into a controlled area like a port - or inland terminal. Gate in has been completed once the operator of the area is legally in possession of the container.
Gate-out	The action, when a container is removed from a controlled area like a port or marine or inland terminal. Gate-out has been completed once the possession of the container has been transferred from the operator of the terminal to the entity, who is picking up the container.
Haulage requirements	Specifications for a hauler set by a carrier regarding a specific work order, e.g., timeline, capabilities.

Haulage types	The joint term for merchant and carrier haulage. It should be noted that a shipment can have several types of haulage throughout the transport from origin to destination.
House B/L	A House Bill of Lading (HBL) is a document created by Ocean Transport Intermediary (OTI) such as a freight forwarder or non-vessel operating company (NVOCC). The document is an Acknowledgment of the receipt of goods that are to be shipped. It is issued to the supplier/shipper once the cargo has been received.
HTS code	The Harmonized System (HS) is an international nomenclature for the classification of products. It allows participating countries to classify traded goods on a common basis for customs purposes. At the international level, the Harmonized System for classifying goods is a six- digit code system.
In gauge cargo	Cargo which has been loaded into special equipment but does not exceed the dimensions of a standard 20', 40', or high cube container.
Inducement call	An ad hoc or additional port call made on a specific voyage that was not originally included in the long- term schedule.
Inland terminal	A facility where containers are loaded, moved, or discharged. The inland terminal can be serviced by trucks, rail, and barges (at river terminals).
Inland transport request	Internal work document/file facilitating the collection of necessary data prior to issuing the carrier haulage work order.
Inspected	An indicator that the Seal on the equipment has been inspected.
Internet of Things (IoT)	IoT has been defined by the International Telecommunication Union (ITU) as a global infrastructure for the information society, enabling advanced services by interconnecting (physical and virtual) things based on existing and evolving interoperable information and communication technologies. In the context of carriers and the container shipping industry, IoT refers to the concept of connecting sensors and other electronic devices mounted on the shipping containers to the internet and / or local systems. This is done to send and receive data to and from the devices for different supply chain purposes and applications.
IoT container device	An IoT device installed on the container. It has the purpose of establishing communication between the container, internet, gateways, other IoT devices and/or sensors placed in the perimeter

or inside of the container. Its main function is to act as an interface between multiple sensors/other IoT devices on the container and the network or IoT gateway. Should not be confused with IoT devices placed on specific container cargo/ packages/ load.

IoT gateway	Physical devices that act as a connectivity intermediary between multiple IoT container solution devices, IoT internet platforms and / or local systems.
Laden (container)	An indicator that stuffing of container is complete, and a valid seal has been applied to the container doors. Containers are considered Laden regardless of whether the equipment has room for additional cargo. This means the container is considered Laden even if it is only stuffed with partial load.
Load(L)	The action of lifting cargo or a container on board of the mode of transportation. Load is complete once the cargo or container has been lifted on board the mode of transport and secured.
L/discharge confirmation	The confirmation sent to the customer, shipper, or consignee, that the equipment has been loaded/discharged. This message is based on the "equipment discharge/load report."
Load list	List of containers sent by the carrier or its agent to the terminal to instruct which containers must be loaded on a specific vessel/voyage. Each vessel can have several load lists in case of vessel sharing agreements.
Long-term schedule	The updated carrier schedule of planned voyages, based on the final proforma schedule, including specific vessel & voyage number, to be time and date stamped and published at least 3 months ahead of commencement of the actual voyage. It incorporates planned dry dockings.
Manifest corrector	The manifest corrector is used to make changes to a manifest after the manifest in question has been submitted to the relevant authorities.
Marks and numbers	The identifying details on a package or the actual markings that appear on the package(s). This information is provided by the customer.
Master B/L	A Master Bill of Lading (MBL) is a document created by the Carrier. It is issued as an original bill of lading and summarizes the content of a shipment including the bill of lading numbers, the lot numbers assigned to the various items within the shipment, as well

as a description of the freight stored within each container of each bill of lading. The document also includes the terms for transporting the freight and the name and address of the consignor, or the shipper, and the consignee, the person who possess the goods.

Master schedule	A long-term view of the agreed proforma schedule including proforma dates of call, cycle and agreed vessel sequence. The master schedule is time and date stamped and is to be used as a reference.
Measurement volume	Is calculation made by multiplying the width, height, and length of the packed cargo. Can be in either cubic meter or cubic feet, as provided by the shipper.
Mode of transport code	The code specifying the transport mode for the logistic transport movement i.e., rail, sea, road, air.
Mooring	The activity of securing a vessel, craft or boat, or other floating objects by ropes and/or chain to the shore, or to anchors. This service is usually provided by linesmen.
Nautical clearance	The process of getting confirmation from the harbormaster or relevant authorities to proceed from Vessel Traffic Service (VTS) to Berth including the arrangement of necessary navigational support services for Pilotage, Towage, Mooring and Unmooring.
Network	Refers to the network of vessels deployed globally.
NVOCC	A Non-Vessel Operating Common Carrier (NVOCC) is a common carrier that does not operate vessels by which the transportation is provided and the NVOCC is a shipper in its relationship with an ocean common carrier.
Notice of availability	An event occurring at a terminal when the carrier has released cargo, and the cargo is physically capable of being gated out.
Notify party	The person or company to be advised by the carrier upon arrival of the goods at the destination port.
Off dock storage	A container yard (CY) that is situated outside of the port premises.
On board date	Date when the last container that is linked to the bill of lading, is physically on board of the vessel indicated on the bill of lading.

On hold	A status indicator that can be used with a number of activity identifiers to denote that a container or shipment has been placed on hold i.e., cannot progress in the process.
Onward inland routing	The location where the cargo is transported from port of discharge to consignee location on consignee's responsibility (merchant haulage).
Out-of-gauge cargo	Cargo, which has been loaded into special equipment that exceed the dimensions of a standard 20', 40', or high cube container. E.g., Out-of-gauge cargo is over length, over width, over height, or combinations thereof.
Per Diem	A daily charge assessed by either the owner or lessor of an intermodal chassis to compensate for the use of that chassis.
Pick up	An event type that identifies a plan or request has been made to collect a shipment at a customer location. This event type may be accompanied by a Planned, Estimated or Actual time to indicate when the moment when the collection from customer location is planned or estimated to take place or has taken place.
Pilot boarding place	The area where the pilot comes on board of the vessel.
Pilotage	The activity of conducting a vessel within restricted waters.
Place of delivery	The location where the cargo is handed over to the consignee, or his agent, by the shipping line and where responsibility of the shipping line ceases.
Place of issue	Location where the original Bill of Lading has been issued.
Place of receipt	The location where the cargo is handed over by the shipper, or his agent, to the shipping line. This indicates the point at which the shipping line takes on responsibility for carriage of the container.
Planned event	The planned time is the point in time, where ocean carrier voyage completion is planned to be completed in accordance with the planned route. The planned event for the vessel voyage should be consistent with the master schedule, and in accordance with the long-term schedule be published at least three months in advanced of the planned journey.
Port	A facility with piers or docks. Ports are accessed by vessels and barges and represent the destinations of a voyage. Ports can contain one or more terminals.

Port call	A intermediate stop of a vessel in the rotation of ports on the voyage for i.e., cargo operation, repairs or taking on supplies or fuel. A vessel may have several different terminal calls during a single port call.
Port call events	<p>Planned, estimated and actual port call events define the different time elements in the planning cycle of a port call event. For example:</p> <ul style="list-style-type: none"> • Planned: a carrier or carriers formulates Master and long-term schedule that provided public information three months in advance with real time information of notice of blanked sailings time and date stamped. • Estimated: a carriers or carriers, consistent with a long-term schedule, provided public information of the forecasted real time status, with status information, for the completion time of arrival at berth. The running forecast should be accomplished as soon as safe and feasible after operational decisions impacting the completion time, and be time and date stamped. Carriers shall also provide public information with forecasted real time status, with status information, for the completion time of arrival at berth, five days in advance for public notification at the terminal berth will arrive at time and date stamped. • Actual: the vessel of the carrier arrives at berth, time and date stamped.
Port call phases	<p>A time and date stamped indicator that shows a vessel's status within the four main phases of a port call. This term is accompanied by one of the following descriptors:</p> <ul style="list-style-type: none"> • Inbound: indicates that the vessel is currently in the inbound phase which covers the vessel's physical movement from approach to (anchor) berth. • Outbound: indicates that the vessel is currently in the outbound phase which covers the vessel's physical movement from (anchor) berth to its next destination. • Shifting: indicates that the vessel is currently in the shifting phase which covers the vessel's physical movement from (anchor) berth to (anchor) berth. • Alongside: indicates that the vessel is currently in the alongside phase which covers the vessel's time while at berth from first line secured till the last line released.
Port call swap	Occurs when the vessel port call rotation is changed after publication of the long-term schedule.

Port code	A UN Location code indicating a specific port or terminal.
Port of discharge	The location where the cargo is discharged from the last sea-going vessel.
Port of loading	The location where the cargo is loaded onto a first sea-going vessel for water transportation.
Port omission	When a ship does not call a port included in the long-term schedule that was planned at the start of the voyage.
Port operation coordination process	A process established by the appropriate port governing body to provide as a repository of publicly available information for ocean and intermodal carriers and terminals and help facilitate other intermodal transportation services. intermodal transportation services.
Port terminal	A facility located adjacent to a waterway, where containers will be loaded, moved, or discharged onto/from sea-going vessels and barges.
Proforma	The Proforma consists of the final port rotation with the planned time of arrival and departure for each port call.
Publicly available	<p>Publicly available information is information that is available to the public through an Automated Protocol Interface (API). This information should be time and date stamped, responsibly protected, and remain available for 3 months from the date it was posted and stored for up to 2 years. Publicly available information should be classified as either Open Facing Information or Closed Facing Information as follows:</p> <ul style="list-style-type: none"> • Open Facing Information is information that should be made available through an API without regard to restriction. • Closed Facing Information is information that is usually protected information that should be made available through an API to an entity that is legally entitled to receipt of information (i.e., in privity of contract, for example, a terminal should make terminal cargo status information available to carriers/shippers and shipper agents upon request).
Rail carrier	Rail transport designed for the movement of goods or people. I the context of the event naming structure this is limited to rail transport

designed for international containerized cargo, and subject to status under the MTDS.

Ramp	An inland container terminal location (storing both full and empty containers) that is connected directly to a rail ramp where containers are loaded/discharged to/from a train. In cases where the inland container terminal does not have a rail-ramp, the alternative location term “inland terminal” should be used.
Received	The event associated with receiving a document or a set of information constituting a document type. A document is received on it is registered by the receiving party.
Received for shipment date	Date when the carrier has taken possession of the last container linked to the B/L, in case of carrier haulage, at place of receipt and in case of merchant haulage, when the container is physically in the terminal.
Reefer	A container designed and equipped for the transportation of food products under cold storage.
Reefer temperature setting	The setting requested by the customer at time of booking request for the carrier to operationally set when releasing containers. May be expressed as a range min/max and a date range.
Re-export	Upon customer’s request or because cargo is refused at destination, container must be returned to port of loading or another port.
Rejected	An indicator that a document, request or other information type sent or submitted to a carrier has been rejected/not admitted by the carrier. This is often due to commercial limitations, or because the document or request contained missing or incorrect information.
Release reference number	Reference number contained in the cargo release. It is provided by the carrier to the terminal and to the cargo receiver, and it must be presented upon pick up at the terminal.
Released	A status indicator that can be used with a number of activity identifiers to denote that a container or shipment has been released i.e., allowed to move from depot or terminal (by authorities and carrier).
Removed	An indicator that a container seal has been removed from the equipment for inspection.
Requested	A status indicator that can be used with several identifiers to denote that a certain activity, service, or document has been requested by

the carrier, customer, or authorities. This status remains constant until the requested activity is “Completed”.

Resealed	An indicator that the equipment has been re-sealed after inspection.
Re-stowed	Re-stowed container means that, at some point along the route, it will be moved from a previous stowage location on board the vessel to another stowage location on board the same vessel. This can be done in one crane move (ship to ship shifting), but more frequently done via shore/the pier (ship to pier shifting).
Re-use	When an import customer wants to reuse the import container for a new export.
Roll over	When an ocean freight cargo is said to have been ‘rolled’, it means it has not been loaded onto the vessel it was meant to be shipped on but rolled to a subsequent vessel.
Sea waybill	A separate specific transport document type which is non-negotiable, does not transfer title, but which evidences the contract of carriage and receipt of the goods. It must be issued to a named consignee and can be both in a physical or digital format. Goods can be released at destination without presenting the original sea waybill as proof of ownership.
Seal	A single-use instrument used for securing container or freight car or truck doors. Seals have a unique number for record purposes.
Seal number	An identification number of a seal affixed to the container.
Seal source	The seal issuer.
Service	The roundtrip sequence of ports being served by a vessel on a specific Proforma (schedule). Synonyms are Rotation, Loop, or String. A Service is defined by: Rotation, Transit times, Weekdays of departure per port, Frequencies.
Service contract	A written contract, other than a Bill of lading or receipt, between shipper and carrier through which the shipper commits to provide a certain minimum quantity of cargo over a fixed period and the carrier commits to a certain rate or rate schedule and a defined service level.
Service type	Indicates the type of service offered at the place of receipt or place of delivery. Either:

- Container yard (CY) (includes rail ramp) where the carrier takes ownership of a fully stuffed container provided by the customer at the carrier/carrier's appointed supplier's facility (usually called terminal or depots).
- Store door (SD), indicating that the carrier is taking ownership of a fully stuffed container at the customer's appointed premises.
- Container freight station (CFS), indicating that the carrier has received the cargo and is responsible for stuffing of the cargo within the container.

Shipment

A shipment is an identifiable collection of one or more trade or cargo items to be/to transported together from the seller (original consignor/shipper) to the buyers (final/ultimate consignee).

Shipment types:

- A shipment can be made up of some or all trade or cargo Items from one or more sales orders.
- A shipment may form a part or all a consignment or may be transported in different consignments.

It constitutes confirmation of a booking request from a customer.

Shipment journey

Booking-to-payment covers all activities and documentation processes related to a customer's order, and includes customer driven processes (and/or triggered by the customer and process executed in relation to an agreement made, between the customer and the carrier, which is later invoiced and settled

Shipment release message

The document sent to the consignee informing, that the shipment can now be released from its current location and transferred to the consignee on gate-out.

Shipper

Shipper means any person or legal entity by whom or in whose name, or on whose behalf, a contract of carriage of goods by sea has been concluded with a carrier, or any person by whom or in whose name, or on whose behalf, the goods are delivered to the carrier in relation to the contract of carriage by sea.

Shipping Instruction (SI)

An enrichment to the original booking shared by the shipper to the carrier. The shipping instruction includes volume/weight, shipping dates, origin, destination, and other special instructions. The information given by the shipper through the shipping instructions is the information which is required to create the Bill of Lading.

Short shipment	A short shipment is a situation when a container that should have been loaded on the vessel according to the Load List and the manifest was not loaded but was left behind.
Slot charter agreement	An agreement between 2 carriers to sell or exchange a specific number of TEU slots in one or more trades.
Special cargo	Can be used to describe cargo which is not transported in a regular dry container or is considered dangerous goods but could also be used to describe out of gauge cargo.
Special equipment	All container types other than regular dry or reefer containers. Examples of these can be flat racks (open containers for oversized, irregular and/or heavy cargo), Open tops (fitted with a solid removable roof), etc.
Stowage instructions	The vessel operator's instructions to the terminal on the placement of containers on the vessel to prevent damage or loss, or to ensure safety/compliance.
Stowage plan	Method of matching space to containers on board of a vessel in the order to optimize discharge of load at the respective boards. Stowage plan is also called BAPLIE.
Straight B/L	A non-negotiable bill of lading, with a named consignee, to whom the goods are to be consigned. A straight B/L is a title to the goods. Goods cannot be released at destination without presenting the original document and the named consignee identifying itself.
Stripping	The act of unloading cargo from containers or equipment.
Stripping location	The location where the process of unloading the cargo of a container takes place.
Stuffing	The process of loading the cargo in a container or in/onto another piece of equipment.
Surrendered	A transportation document is surrendered once the possession/ownership of the document has been transferred from the customer to the carrier (normally in return for cargo release).
Terminal	A facility for loading, moving, or discharging containers. Terminals can be both inland terminals for trucks and rail or marine terminals are accessed by vessels, and these can contain multiple berth spaces.

Terminal cargo status	<p>The status of containers in a terminal should be time and date stamped and classified in one of the four status requirements described below. Information should be made publicly available to any legally authorized entity upon request (carrier, shipper, or shipper's agent). Terminal cargo status should include time and date status on the commencement and duration of free time, time and date stamped, and information on commencement of free time and any change to demurrage status, time and date stamped. Terminal status requirements are as follows:</p> <ul style="list-style-type: none"> • Available: the container has been released by the carrier and is capable of physically being moved from terminal. • Unavailable: the container cannot be moved for any other reason. • On hold: the container cannot be moved pending government inspection. In addition to a time and date stamp indicating the time of change of status, in the event of the container inspection being off-terminal a time and date stamp for gate-out/gate-in and location of the inspection site. • Cargo handling: the container cannot be moved pending cargo handling/stuffing and stripping/consolidation. In addition to a time and date stamp indicating the time of change of status, in the event of the container handling being off-terminal a time and date stamp for gate-out/gate-in and location of the cargo handling site.
Terminal move	<p>Each terminal has a set number of moves, which can be performed on a vessel during a port call. One move is usually defined as the movement (loading or unloading) of one container.</p>
Terms and conditions	<p>Carrier general terms and conditions printed on the transport document.</p>
Total container weight	<p>Includes Cargo Gross Weight plus Container Tare Weight. It is populated based on data in the fields cargo gross weight and container tare weight total number of containers or packages received by the carrier. In the case of a CY receipt, this indicates the number of containers linked to a shipment. In the case of a CFS receipt, this indicates the number of packages received by the customer.</p>
Towage	<p>The activity of one or more vessels (boats/tugs) assisting another vessel with maneuvers within a port area. The service of tugs assisting a ship or other vessel in ports or other locations. The act of towing a ship or other objects from one place to another.</p>

Trade lane	An East/West or North/South directional trade indicator identifying the geographic area being covered by a specific carrier or service. A trade lane can have many services (e.g., Transpacific East-bound).
Transport	The transport instance used to convey goods or other objects from place to place during logistics cargo movements.
Transport document	The document that governs the terms of carriage between shipper and carrier for maritime transportation. Either a Bill of Lading or Sea Waybill.
Transport document issuer	Issuing container shipping line (carrier).
Transport document no.	Unique identifier of the transport document allocated by the shipping line. Under certain conditions provided by the customer in the shipping instruction. It is the main number used for tracking the status of the shipment.
Transport document type	Specification of the transport document type to be issued by the carrier. Options are either B/L or Sea Waybill.
Transport leg	Can be defined as a sea passage in the rotation of ports in a voyage or a specific section of a complete transport of a shipment.
Transport plan	Plan for the end-to-end route of a shipment. This includes specification of all transport legs, timings, schedules, and interdependencies between transport legs.
Transshipment	A terminal operation whereby containers or cargo are transferred from one vessel to another to reach their destination, compared to a direct service from the load port of origin to the discharge port of destination.
Truck	Road going vehicle designed for the movement of goods or people. In the context of the event naming structure this is limited to trucks designed for containerized cargo and delimited from trucks and vans carrying parcels or other cargo.
UN Location	A location as defined by UNECE and commonly known as "UN/LOCODE" ("United Nations Code for Trade and Transport Locations"). The UN Location identifies a location in the sense of a city/a town/a village, being the smaller administrative area existing as defined by the competent national authority in each country.

UN Location Code	The UN Location Code identifies a location in the sense of a city/a town/a village, being the smaller administrative area existing as defined by the competent national authority in each country. A complete UN Location Code is a combination of a 2-character country code and a 3-character city/town/area LOCODE, e.g., BEANR is known as the city of Antwerp (ANR), which is in Belgium (BE).
Unmooring	The activity of removing the ropes and/or chains that are securing a vessel, craft or boat, or other floating objects to the shore, or to anchors. This service is usually provided by linesmen.
Verified gross mass	The verified gross mass (VGM) is a declaration informing the carrier of the weight of the container, verified by an authorized person from the shipper or on behalf of said shipper. This includes cargo weight, bracing, dunnage, and container tare weight.
Verify copy	A final draft of the Bill of Lading that is sent to the shipper for approval before the B/L is issued.
Vessel	A floating, sea going structure (mother vessels and feeder vessels) with either an internal or external mode of propulsion designed for the transport of cargo and/or passengers.
Vessel call sign	A unique alphanumeric identity that belongs to the vessel. Each Call Sign begins with the Call Sign alphanumeric prefix that indicates nationality, e.g., prefixes allocated to the United Kingdom are 2, G, M, VP-VQ, VS, ZB-ZJ, ZN-ZO and ZQ. The prefix is usually followed by 2 or 3 alphanumeric characters. Maximum length is 7 characters. For example, Cunard Lines Queen Mary 2 has the Call Sign W6RO.
Vessel capacity	The operational capacity of a vessel on a specific voyage. This capacity considers all limiting factors such as the physical capacity on-board, but it also allows for constraints in the terminals to load/discharge the vessel for the specific voyage.
Vessel IMO number	The unique reference for a registered Vessel. The reference is the International Maritime Organization (IMO) number, also sometimes known as the Lloyd's register code.
Vessel operator	The operator of the vessel. It is the party that: reports the vessel to port authorities and other legal entities, conducts the stowage planning & aligns berthing with the terminal.

Vessel rotation	The order and sequence in which a vessel calls the ports on its route.
Vessel schedule	The timetable of departure and arrival times for each port call on the rotation of the vessel in question.
Vessel waiting time	The time a vessel waits before it arrives in the port at berth.
Voyage	A part of a service roundtrip that normally changes at the geographical “end-point” of a vessel rotation and as such that specific port call can have two voyages – One for the discharge of final shipments on the “current” voyage, and a new voyage number identifying the commencement of loading shipments (for allocation purposes). One rotation will normally have 2 voyages, one on each haul/direction.
Voyage number	A carrier specific voyage identifier.
Work order	An order for specific transportation work carried out by a third-party provider on behalf of the issuing party.